

WO 99/27105

PCT/IB98/01890

130 135 140
 Thr Leu Ser Gly Phe Ser Ala Leu Ser Phe Leu Lys Ser Pro Ala Ser
 145 150 155 160
 Thr Val Thr Asn Gly Leu Gly Ala Ile Asn Val Lys Gly Asn Leu Ser
 165 170 175
 Leu Leu Asp Asn Asp Lys Val Leu Ile Gln Asp Asn Phe Ser Thr Gly
 180 185 190
 Asp Gly Gly Gln Leu Ile Val Gln Ala Pro
 195 200

<210>26

<211>199

<212>PRT

<213>Chlamydia pneumoniae

<400>26

Gly Ile Asp Ser Gly Gln Phe Leu Asn Arg Arg Trp Arg Thr Ile Asn
 1 5 10 15
 Cys Ala Gly Ser Leu Lys Ile Ala Asn Asn Lys Ser Leu Ser Phe Ile
 20 25 30
 Gly Asn Ser Ser Ser Thr Arg Gly Gly Ala Ile His Thr Lys Asn Leu
 35 40 45
 Thr Leu Ser Ser Gly Gly Glu Thr Leu Phe Gln Gly Asn Thr Ala Pro
 50 55 60
 Thr Ala Ala Gly Lys Gly Gly Ala Ile Ala Ile Ala Asp Ser Gly Thr
 65 70 75 80
 Leu Ser Ile Ser Gly Asp Ser Gly Asp Ile Ile Phe Glu Gly Asn Thr
 85 90 95
 Ile Gly Ala Thr Gly Thr Val Ser His Ser Ala Ile Asp Leu Gly Thr
 100 105 110
 Ser Ala Lys Ile Thr Ala Leu Arg Ala Ala Gln Gly His Thr Ile Tyr
 115 120 125
 Phe Tyr Asp Pro Ile Thr Val Thr Gly Ser Thr Ser Val Ala Asp Ala
 130 135 140
 Leu Asn Ile Asn Ser Pro Asp Thr Gly Asp Asn Lys Glu Tyr Thr Gly
 145 150 155 160
 Thr Ile Val Phe Ser Gly Glu Lys Leu Thr Glu Ala Glu Ala Lys Asp
 165 170 175
 Glu Lys Asn Arg Thr Ser Lys Leu Leu Gln Asn Val Ala Phe Lys Asn
 180 185 190
 Gly Thr Val Val Leu Lys Arg
 195

<210>27

<211>483

<212>PRT

<213>Chlamydia pneumoniae

<400>27

Lys Gly Asp Val Val Leu Ser Ala Asn Gly Phe Ser Gln Asp Ala Asn
 1 5 10 15
 Ser Lys Leu Ile Met Asp Leu Gly Thr Ser Leu Val Ala Asn Thr Glu
 20 25 30
 Ser Ile Glu Leu Thr Asn Leu Glu Ile Asn Ile Asp Ser Leu Arg Asn
 35 40 45
 Gly Lys Lys Ile Lys Leu Ser Ala Ala Thr Ala Gln Lys Asp Ile Arg
 50 55 60
 Ile Asp Arg Pro Val Val Leu Ala Ile Ser Asp Glu Ser Phe Tyr Gln
 65 70 75 80
 Asn Gly Phe Leu Asn Glu Asp His Ser Tyr Asp Gly Ile Leu Glu Leu
 85 90 95
 Asp Ala Gly Lys Asp Ile Val Ile Ser Ala Asp Ser Arg Ser Ile Asp
 100 105 110
 Ala Val Gln Ser Pro Tyr Gly Tyr Gln Gly Lys Trp Thr Ile Asn Trp
 115 120 125
 Ser Thr Asp Asp Lys Lys Ala Thr Val Ser Trp Ala Lys Gln Ser Phe
 130 135 140
 Asn Pro Thr Ala Glu Gln Glu Ala Pro Leu Val Pro Asn Leu Leu Trp

260

265

<210>24

<211>277

<212>PRT

<213>Chlamydia pneumoniae

<400>24

Glu Ser Leu Asn Glu Arg Leu Lys Lys Ser Lys Thr Met Leu Asp Arg
 1 5 10 15
 Ala Lys Trp His Ile Glu Asn Ala Glu Asp Ser Ile Thr Trp Trp Thr
 20 25 30
 Ser Gln Ile Glu Met Lys Asp Met Lys Ala Arg Leu Lys Ile Leu Lys
 35 40 45
 Glu Asp Ile Thr Ser Val Leu Pro Glu Ile Asp Glu Ile Glu Thr Cys
 50 55 60
 Leu Ser Leu Glu Glu Leu Pro Leu Leu Thr Thr Arg Glu Leu Leu Thr
 65 70 75 80
 Lys Ser Tyr Leu Lys Phe Lys Ile Cys Ser Glu Thr Leu Leu Lys Met
 85 90 95
 Thr Ser Val Phe Glu Asn Asn Ile Tyr Val Gln Glu Tyr Glu Val Gln
 100 105 110
 Leu Gln Asn Leu Gly Phe Lys Leu Gln Gly Ile Ser Gln Arg Phe Gly
 115 120 125
 Lys Lys Gln Asp Asp Phe Ala Asn Leu Glu Glu Gln Val Ala Leu Gln
 130 135 140
 Lys Lys Arg Leu Arg Glu Leu Thr Gln Asn Phe Glu Ile Gln Gly Phe
 145 150 155 160
 Asn Phe Met Lys Glu Asp Phe Lys Ala Ala Lys Asp Leu Tyr Ile
 165 170 175
 Arg Ser Thr Ala Glu Gln Lys Met Asn Phe Asp Val Pro Cys Met Glu
 180 185 190
 Leu Phe Arg Arg Tyr His Glu Glu Val Asn Lys Pro Leu Leu Glu Leu
 195 200 205
 Met Tyr Asn Cys Ala Asp Ser Tyr Arg Asp Ala Lys Lys Lys Leu Cys
 210 215 220
 Ser Leu Arg Leu Asp Glu Lys Glu Leu Leu Gln Lys Glu Ile Lys Lys
 225 230 235 240
 Glu Glu Phe Tyr Gln Lys Lys Gln Gln Arg His Ala Asp Arg Ser Arg
 245 250 255
 His Thr Arg Tyr Gln Lys Leu Arg Ile Ala Glu Glu Leu Ala Leu Glu
 260 265 270
 Leu Lys Lys Lys Ile
 275

<210>25

<211>202

<212>PRT

<213>Chlamydia pneumoniae

<400>25

Leu Leu Ser Leu Ser Asn Leu Leu Tyr Trp Lys Glu Ser Pro Leu Arg
 1 5 10 15
 Glu Lys Lys Val Val Met Lys Ile Pro Leu Arg Phe Leu Leu Ile Ser
 20 25 30
 Leu Val Pro Thr Leu Ser Met Ser Asn Leu Leu Gly Ala Ala Thr Thr
 35 40 45
 Glu Glu Leu Ser Ala Ser Asn Ser Phe Asp Gly Thr Thr Ser Thr Thr
 50 55 60
 Ser Phe Ser Ser Lys Thr Ser Ser Ala Thr Asp Gly Thr Asn Tyr Val
 65 70 75 80
 Phe Lys Asp Ser Val Val Ile Glu Asn Val Pro Lys Thr Gly Glu Thr
 85 90 95
 Gln Ser Thr Ser Cys Phe Lys Asn Asp Ala Ala Ala Gly Asp Leu Asn
 100 105 110
 Phe Leu Gly Gly Gly Phe Ser Phe Thr Phe Ser Asn Ile Asp Ala Thr
 115 120 125
 Thr Ala Ser Gly Ala Ala Ile Gly Ser Glu Ala Ala Asn Lys Thr Val

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PCT/IB98/01890

Val Cys Gly Ala Ile Val Leu Ser Gly Val Ile Ser Gly Leu Ser Ala
 50 55 60
 Leu Ile Val Cys Gly Leu Gly Ile Ser Thr Ile Ser Leu Gly Val Val
 65 70 75 80
 Leu Phe Val Leu Gly Leu Ile Leu Leu Leu Arg Lys Arg Glu Leu Thr
 85 90 95
 Leu Glu Gln Ile Glu Ala Lys Gln Ile Ala Glu Thr Phe Ala Asp Glu
 100 105 110
 Leu Lys Glu Leu Glu Met Tyr Ile Gln Ser Thr Glu Lys Ser Leu Glu
 115 120 125
 Lys Ile Glu Gly Ser Arg Tyr Ser Asp Gln Gly Phe Leu Asn Arg Ala
 130 135 140
 Thr Gln Lys Ile Leu Asp Leu Glu Ser Ser Leu Ser Ser Ile Thr Ser
 145 150 155 160
 Glu Phe Arg Asp Leu Arg Gln Leu Phe Asp Glu Glu Lys Ile Glu Leu
 165 170 175
 Leu Ser Gly Glu Arg Leu Leu Glu Phe Ile Ala Ala Asn Leu Phe Lys
 180 185 190
 Gln Gly Arg Asp Val Tyr Leu Asn Leu Gly Asn Leu Ala Asp Ile Arg
 195 200 205
 Ala Tyr Met Gly Pro Asn Asn Tyr Lys Val Ala Met Val Ile Glu Lys
 210 215 220
 Ala Lys Ala Val Val His Glu Phe Ile Val Leu Thr Thr Met Ala Arg
 225 230 235 240
 Glu Leu Glu Phe Phe Phe
 245

<210>23

<211>265

<212>PRT

<213>Chlamydia pneumoniae

<400>23

Gly Ile Arg Val Phe Phe Leu Lys Asn Lys Tyr Gly Leu Leu Lys Gly
 1 5 10 15
 Met Tyr Gln Glu Asn Leu Arg Leu Leu Glu Arg Leu Leu Tyr Asn Ser
 20 25 30
 Val Gln Lys Ser Tyr Ala Asp Arg Leu Phe Ser Tyr Glu Lys Thr Lys
 35 40 45
 Met Val His Asp Thr Pro Leu Ile Pro Trp Glu Glu Asp Lys Glu Lys
 50 55 60
 Cys Ala Glu Ala Glu Lys Ala Phe Leu Glu Gln Gln Lys Ile Leu Leu
 65 70 75 80
 Asp Tyr Gly Lys Ser Ile Phe Trp Leu Asn Glu Asn Asp Glu Ile Asn
 85 90 95
 Leu Asn Asp Pro Trp Ser Trp Gly Leu Asn Thr Val Arg Thr Arg Lys
 100 105 110
 Val Phe Gln Glu Val Asp Asp Ser Glu Arg Trp Asn His Lys Val Leu
 115 120 125
 Ile Gln Lys Leu Glu Asp Asp Tyr Glu Lys Leu Leu Glu Glu Ser Ser
 130 135 140
 Lys Glu Ser Thr Glu Ala Asn Lys Lys Leu Leu Ser Asp Leu Val Asp
 145 150 155 160
 Arg Leu Glu Asp Ala Lys Thr Lys Phe Phe Leu Lys Lys Gln Glu Glu
 165 170 175
 Val Glu Thr Arg Val Lys Asp Leu Arg Ala Arg Tyr Gly Gly Thr Val
 180 185 190
 Asp Pro Lys Gln Asp Thr Glu Ala Lys Lys Lys Val Glu Leu Glu Ala
 195 200 205
 Ser Leu Glu Thr Phe Leu Asp Ser Ile Glu Ser Glu Leu Val Gln Cys
 210 215 220
 Leu Glu Asp Gln Asp Ile Tyr Trp Lys Glu Gln Asp Val Lys Asp Leu
 225 230 235 240
 Ala Arg Thr Gln Glu Leu Glu Glu Gln Asp Ile Glu Ala Lys Arg Glu
 245 250 255
 Glu Ala Ala Glu Asp Leu Arg Lys Ser

WO 99/27105

PCT/IB98/01890

Lys Glu Ala Thr Ala Glu Val Glu Asn Lys Ile Leu Ser Asp Ala Glu
 530 535 540
 Ser Arg Leu Glu Ile Val Phe Glu Asp Val Lys Glu Met Pro Cys Arg
 545 550 555 560
 Ile Glu Glu Ile Glu Lys Thr Leu Arg Met Ala Glu Leu Pro Leu Leu
 565 570 575
 Pro Thr Lys Lys Ala Phe Glu Lys Ala Cys Ser Gln Tyr Asn Ser Cys
 580 585 590
 Ala Glu Met Leu Glu Lys Val Lys Pro Tyr Cys Lys Glu Ser Leu Ala
 595 600 605
 Tyr Val Thr Ser Lys Glu Arg Leu Val Ser Leu Asp Glu Asp Leu Arg
 610 615 620
 Arg Ala Tyr Thr Glu Cys Gln Lys Arg Phe Gln Gly Asp Ser Gly Leu
 625 630 635 640
 Glu Ser Glu Val Arg Ala Cys Arg Glu Gln Leu Arg Glu Arg Ile Gln
 645 650 655
 Glu Phe Glu Thr Gln Gly Leu Asp Leu Val Glu Lys Glu Leu Leu Cys
 660 665 670
 Val Ser Ser Arg Leu Arg Asn Thr Glu Cys Asp Cys Val Ser Gly Val
 675 680 685
 Lys Lys Glu Ala Pro Pro Gly Lys Lys Phe Tyr Ala Gln Tyr Tyr Asp
 690 695 700
 Glu Ile Tyr Arg Val Arg Val Gln Ser Arg Trp Met Thr Met Ser Glu
 705 710 715 720
 Arg Leu Arg Glu Gly Val Gln Ala Cys Asn Lys Met Leu Lys Ala Gly
 725 730 735
 Leu Ser Glu Glu Asp Lys Val Leu Lys Glu Glu Glu Tyr Trp Leu Tyr
 740 745 750
 Arg Glu Glu Arg Lys Asn Lys Glu Lys Arg Leu Val Gly Thr Lys Ile
 755 760 765
 Val Ala Thr Gln Gln Arg Val Ala Ala Phe Glu Ser Ile Glu Val Pro
 770 775 780
 Glu Ile Pro Glu Ala Pro Glu Glu Lys Pro Ser Leu Leu Asp Lys Ala
 785 790 795 800
 Arg Ser Leu Phe Thr Arg Glu Asp His Ser
 805 810

<210>21

<211>83

<212>PRT

<213>Chlamydia pneumoniae

<400>21

Glu Trp Ser Ser Arg Val Asn Lys Glu Arg Ala Leu Ser Ser Lys Leu
 1 5 10 15
 Gly Phe Ser Ser Gly Ala Ser Gly Ile Ser Gly Thr Ser Met Asp Ser
 20 25 30
 Asn Ala Ala Thr Arg Cys Cys Val Ala Thr Ile Leu Val Pro Thr Lys
 35 40 45
 Arg Phe Ser Leu Phe Phe Leu Ser Ser Arg Tyr Asn Gln Tyr Ser Ser
 50 55 60
 Ser Leu Arg Thr Leu Ser Ser Ser Leu Arg Pro Ala Phe Asn Ile Leu
 65 70 75 80
 Leu His Ala

<210>22

<211>246

<212>PRT

<213>Chlamydia pneumoniae

<400>22

Phe Trp Tyr Ser Ile Met Thr Ala Ala Pro Ala Ile Leu His Val Ser
 1 5 10 15
 Pro Thr Pro Pro Glu Glu Thr Lys Phe Val Ile Pro Lys Asp Ser Lys
 20 25 30
 Ser Arg Ala Leu Gly Ile Thr Leu Leu Val Val Gly Ile Leu Leu Val
 35 40 45

Gly Ser Ile Ser Ser Pro Ser Lys Leu Arg Val Leu Ala Ile Thr Phe
 20 25 30
 Leu Val Phe Gly Met Leu Leu Leu Ile Ser Gly Ala Leu Phe Leu Thr
 35 40 45
 Leu Gly Ile Pro Gly Leu Ser Ala Ala Ile Ser Phe Gly Leu Gly Ile
 50 55 60
 Gly Leu Ser Ala Leu Gly Val Leu Met Ile Ser Gly Leu Leu Cys
 65 70 75 80
 Leu Leu Val Lys Arg Glu Ile Pro Thr Val Arg Pro Glu Glu Ile Pro
 85 90 95
 Glu Gly Val Ser Leu Ala Pro Ser Glu Glu Pro Ala Leu Gln Ala Ala
 100 105 110
 Gln Lys Thr Leu Ala Gln Leu Pro Lys Glu Leu Asp Gln Leu Asp Thr
 115 120 125
 Asp Ile Gln Glu Val Phe Ala Cys Leu Arg Lys Leu Lys Asp Ser Lys
 130 135 140
 Tyr Glu Ser Arg Ser Phe Leu Asn Asp Ala Lys Lys Glu Leu Arg Val
 145 150 155 160
 Phe Asp Phe Val Val Glu Asp Thr Leu Ser Glu Ile Phe Glu Leu Arg
 165 170 175
 Gln Ile Val Ala Gln Glu Gly Trp Asp Leu Asn Phe Leu Ile Asn Gly
 180 185 190
 Gly Arg Ser Leu Met Met Thr Ala Glu Ser Glu Ser Leu Asp Leu Phe
 195 200 205
 His Val Ser Lys Arg Leu Gly Tyr Leu Pro Ser Gly Asp Val Arg Gly
 210 215 220
 Glu Gly Leu Lys Lys Ser Ala Lys Glu Ile Val Ala Arg Leu Met Ser
 225 230 235 240
 Leu His Cys Glu Ile His Lys Val Ala Val Ala Phe Asp Arg Asn Ser
 245 250 255
 Tyr Ala Met Ala Glu Lys Ala Phe Ala Lys Ala Leu Gly Ala Leu Glu
 260 265 270
 Glu Ser Val Tyr Arg Ser Leu Thr Gln Ser Tyr Arg Asp Lys Phe Leu
 275 280 285
 Glu Ser Glu Arg Ala Lys Ile Pro Trp Asn Gly His Ile Thr Trp Leu
 290 295 300
 Arg Asp Asp Ala Lys Ser Gly Cys Ala Glu Lys Lys Leu Arg Asp Ala
 305 310 315 320
 Glu Glu Arg Trp Lys Lys Phe Arg Lys Ala Val Phe Trp Val Glu Glu
 325 330 335
 Asp Gly Gly Phe Asp Ile Asn Asn Leu Glu Gly Asp Trp Gly Thr Val
 340 345 350
 Leu Asp Pro Tyr Arg Gln Glu Arg Met Asp Glu Ile Thr Phe His Glu
 355 360 365
 Leu Tyr Glu Lys Thr Thr Phe Leu Lys Arg Leu His Arg Lys Cys Ala
 370 375 380
 Leu Ala Lys Thr Thr Phe Glu Lys Lys Arg Ser Lys Lys Asn Leu Gln
 385 390 395 400
 Ala Val Glu Glu Ala Asn Ala Arg Arg Leu Lys Tyr Val Arg Asp Trp
 405 410 415
 Tyr Asp Gln Glu Phe Gln Lys Ala Gly Glu Arg Leu Glu Lys Leu His
 420 425 430
 Ala Leu Tyr Pro Glu Val Ser Val Ser Ile Arg Glu Asn Lys Ile Gln
 435 440 445
 Glu Thr Arg Ser Asn Leu Glu Lys Ala Tyr Glu Ala Ile Glu Glu Asn
 450 455 460
 Tyr Arg Cys Cys Val Arg Glu Gln Glu Asp Tyr Trp Lys Glu Glu Glu
 465 470 475 480
 Lys Arg Glu Ala Glu Phe Arg Glu Arg Gly Asn Lys Ile Leu Ser Pro
 485 490 495
 Glu Glu Leu Glu Ser Ser Leu Glu Gln Phe Asp His Gly Leu Lys Asn
 500 505 510
 Phe Ser Glu Lys Leu Met Glu Leu Glu Gly His Ile Leu Lys Leu Gln
 515 520 525

20 25 30
 Thr Asp Ile Glu Thr Val Arg Lys Ser Cys Met Trp Leu Asp Arg Tyr
 35 40 45
 Ala Asp Lys Phe Ile Leu Arg Glu Lys Glu Lys Met Glu Arg His
 50 55 60
 Glu Leu Phe His Ala Thr Met Val Arg Lys Ala Ser Gly His Ala Tyr
 65 70 75 80
 Ala Lys Ala Lys Ala Ala Phe Glu Lys Glu Arg Ser Asn Glu Asn Gln
 85 90 95
 Arg Lys Val Lys Asp Val Glu Lys Trp Leu Ser Lys Gly Leu Ala Glu
 100 105 110
 Phe Arg Asn Gln Glu Ser Arg Arg Ala Arg Glu Arg Leu Arg Glu Leu
 115 120 125
 Gln Thr Leu Tyr Pro Glu Val Ser Val Glu Glu Arg Val Leu Glu Arg
 130 135 140
 Gln Arg Thr Lys Lys Val Asn Leu Glu Asn Leu Tyr Ala Asp Ile Glu
 145 150 155 160
 Lys Lys Tyr His His Cys Val Arg Glu Gln Glu His Tyr Trp Lys Glu
 165 170 175
 Val Glu Asn Lys Glu Ala Glu Tyr Arg Glu Asn Gly Glu Lys Val Leu
 180 185 190
 Ser Ala Glu Glu Val Ser Glu Cys Leu Gln Arg Leu Glu Asp Cys Leu
 195 200 205
 Glu Thr Trp Ser Lys Lys Leu Thr Lys Ala Glu Glu Ser Val Phe Glu
 210 215 220
 Met Lys Phe Asp Ala Thr Glu Lys Leu Gly Asn Lys Val Leu Ser Asp
 225 230 235 240
 Val Thr Asn Arg Leu Glu Ile Leu Cys Glu Asp Ala Glu Glu Met Ile
 245 250 255
 Phe Arg Ile Glu Glu Ile Glu Met Thr Leu Arg Met Val Glu Leu Pro
 260 265 270
 Leu Leu Phe Met Lys Asn Thr Phe Glu Lys Ala Ser Leu Gln Tyr Asn
 275 280 285
 Ser Cys Lys Glu Met Leu Ala Lys Val Glu Pro Gln Cys Lys Glu Ser
 290 295 300
 Pro Thr Tyr Arg Ser Ser Gln Glu Arg Leu Glu Arg Leu Asn Gln Asp
 305 310 315 320
 Leu Gln Thr Ala Tyr Thr Asn Cys Gln Glu Arg Leu Gln Gly Phe Ser
 325 330 335
 Asp Leu Glu Ser Lys Val Arg Thr Cys Arg Asp His Leu Arg Glu Gln
 340 345 350
 Met Lys His Phe Glu Val Gln Gly Leu Asn Phe Ile Asn Glu Glu Leu
 355 360 365
 Leu Trp Val Gly Ala Glu Leu Phe Thr Gln Ala Arg Leu Asp Leu Val
 370 375 380
 Ala Thr Val Pro Tyr Met Glu Phe Tyr Leu Gln Tyr His Asn Ile Lys
 385 390 395 400
 Arg Glu Lys Val Arg Ser Gln Trp Met Ala Lys Thr Glu Arg Tyr Arg
 405 410 415
 Glu Ile Arg Gln Ala Phe Gln Gly Val Met Lys Glu Asp Leu Leu Ala
 420 425 430
 Glu Asp Thr Ile Leu Lys Glu Glu Asp Tyr Trp Leu Leu Arg Asp Asp
 435 440 445
 Trp Leu Leu Arg Asp Glu Arg Lys Asn Arg Gln Arg Arg Leu Ile Cys
 450 455 460
 Asn Lys Ile Ala Ala Ala Gln Gln Arg Val Lys Gly Phe
 465 470 475
 <210>20
 <211>810
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>20
 Cys Lys Tyr Phe Tyr Leu Arg Ser Tyr Pro Pro Pro Gln His Ser Val
 1 5 10 15

900 905 910
 Glu Arg Ala Gly Leu Gly Val Leu Arg Glu Ile Ala Val Glu Ser Thr
 915 920 925
 Tyr Asp Leu Arg Ser Leu Thr Asn Thr Trp Glu Gly Thr Pro Glu Ser
 930 935 940
 Glu Lys Val Tyr Phe Ser Met Tyr Leu Asn Tyr Tyr Asn Glu Glu Lys
 945 950 955 960
 Arg Arg Xaa Lys Thr Arg Leu Val Glu Met Thr Gln Arg Tyr Arg Asp
 965 970 975
 Phe Lys Met Ala Leu Glu Ala Met Gln Phe Asn Glu Glu Ala Leu Leu
 980 985 990
 Gln Glu Glu Leu Ser Ile Gln Ala Pro Ser Glu
 995 1000

<210>18

<211>302

<212>PRT

<213>Chlamydia pneumoniae

<400>18

Cys Lys Tyr Ser Tyr Leu Leu Asn Tyr Pro Pro Pro Pro Arg Arg Ser
 1 5 10 15
 Leu Gly Val Ser Cys Ser Lys Leu Arg Ser Leu Ser Ile Thr Leu Leu
 20 25 30
 Val Leu Gly Val Leu Leu Leu Thr Leu Gly Ile Pro Gly Leu Thr Ala
 35 40 45
 Gly Ile Ser Phe Gly Ala Gly Leu Gly Phe Ser Ala Leu Gly Gly Val
 50 55 60
 Leu Val Ile Ser Gly Leu Leu Phe Leu Leu Val Arg Arg Glu Val Pro
 65 70 75 80
 Thr Val Arg Ser Glu Glu Ile Pro Arg Gly Val Ser Val Thr Pro Ser
 85 90 95
 Glu Glu Pro Ala Leu Glu Lys Ala Gln Lys Glu Pro Glu Thr Lys Lys
 100 105 110
 Ile Leu Asp Arg Leu Pro Lys Glu Leu Asp Gln Leu Asp Thr Tyr Ile
 115 120 125
 Gln Glu Val Phe Ala Cys Leu Glu Arg Leu Lys Asp Pro Lys Tyr Glu
 130 135 140
 Asp Arg Gly Leu Leu Thr Glu Ala Lys Glu Lys Leu Arg Val Phe Asp
 145 150 155 160
 Val Val Glu Lys Asp Met Met Ser Glu Phe Leu Asp Ile Gln Arg Val
 165 170 175
 Leu Asn Glu Glu Ala Tyr Tyr Val Glu His Cys Gln Asp Pro Leu Glu
 180 185 190
 Asn Ile Ala Tyr Glu Ile Phe Ser Ser Gln Glu Leu Arg Asp Tyr Tyr
 195 200 205
 Cys Ala Gly Val Cys Gly Tyr Leu Pro Ser Gly Asp Ala Arg Ala Asp
 210 215 220
 Arg Leu Lys Arg Ser Val Lys Glu Val Met Asp Arg Phe Met Arg Val
 225 230 235 240
 Thr Trp Lys Ser Trp Glu Ala Ser Val Met Leu Asp His Ser Tyr Gly
 245 250 255
 Val Ala Arg Glu Leu Phe Lys Lys Ala Val Gly Val Leu Glu Glu Ser
 260 265 270
 Val Tyr Lys Ile Leu Phe Lys Ser Tyr Arg Asp Ala Phe Tyr Glu Cys
 275 280 285
 Glu Lys Ala Lys Ile Gln Arg Asp Gly Arg Phe Lys Trp Leu
 290 295 300

<210>19

<211>477

<212>PRT

<213>Chlamydia pneumoniae

<400>19

Asp Thr Ser Ala His Ala Glu Gln Arg Phe Arg Asp Ile Asn Gly Cys
 1 5 10 15
 Trp Glu Asp Leu Lys Gln Thr Ile Phe Trp Val Gly Glu His Asp Cys

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385          390          395          400
Val Val Arg Ser Ser Leu Lys Ala Met Val Pro Glu Phe Leu Asp Ile
          405          410          415
Arg Arg Ile Phe Glu Glu Glu Glu Phe Phe Phe Leu Ser Ala Arg Lys
          420          425          430
Arg Leu Ile Asp Leu Ala Thr Thr Leu Val Glu Arg Lys Ile Leu Thr
          435          440          445
Glu Gln Leu Glu Arg Asn Asn Leu Arg Lys Ala Phe Ser Tyr Leu Tyr
          450          455          460
Gln Asp Ser Ile Phe Lys Lys Ile Ile Asp Asn Phe Glu Lys Leu Ala
465          470          475          480
Trp Lys Phe Met Ile Leu Ser Lys Ser Ile Cys Arg Phe Thr Ile Ile
          485          490          495
Phe Glu Asn His Glu His Gly Val Ala Lys Ser Leu Leu His Lys Asn
          500          505          510
Ala Val Leu Leu Glu Lys Val Ile Tyr Arg Ser Leu Gln Lys Ser Tyr
          515          520          525
Arg Asp Ile Gly Met Ser Ser Ala Lys Met Lys Ile Leu His Gly Asn
530          535          540
Pro Phe Phe Ser Leu Glu Asp Asn Lys Lys Thr Ile Met Lys Glu His
545          550          555          560
Ala Glu Met Leu Glu Ser Leu Ser Ser Tyr Arg Lys Val Phe Leu Ala
          565          570          575
Leu Ser Asp Glu Asn Val Val Asp Thr Pro Ser Asp Pro Lys Lys Trp
          580          585          590
Asp Leu Ser Gly Ile Pro Cys Arg Asp Ala Leu Ser Glu Ile Ser Arg
          595          600          605
Asp Glu Gln Trp Gln Lys Lys Ala His Leu Lys His Gln Glu Ser Leu
610          615          620
Tyr Thr Gln Ala Arg Asp Arg Leu Thr Asp Gln Ser Ser Lys Glu Asn
625          630          635          640
Gln Lys Glu Leu Glu Lys Ala Glu Gln Glu Tyr Ile Ser Ser Trp Glu
          645          650          655
Arg Val Lys Lys Phe Glu Ile Glu Arg Val Gln Glu Arg Ile Gln Ala
          660          665          670
Ile Gln Lys Leu Tyr Pro Asn Ile Leu Glu Arg Glu Glu Glu Thr Thr
          675          680          685
Gly Gln Glu Thr Val Thr Pro Thr Val Gln Gly Thr Thr Ala Ser Ser
690          695          700
Asp Leu Thr Asp Ile Leu Gly Arg Ile Glu Val Ser Ser Arg Glu Asp
705          710          715          720
Asn Gln Asn Gln Glu Ser Cys Val Lys Val Leu Arg Ser His Glu Val
          725          730          735
Glu Met Ser Trp Glu Val Lys Gln Glu Tyr Gly Pro Lys Lys Lys Glu
          740          745          750
Phe Gln Asp Gln Met Gly Ser Leu Glu Arg Phe Phe Thr Glu His Ile
          755          760          765
Glu Glu Leu Glu Val Leu Gln Lys Asp Tyr Ser Lys His Leu Ser Tyr
          770          775          780
Phe Lys Lys Val Asn Asn Lys Lys Glu Val Gln Tyr Ala Lys Phe Arg
785          790          795          800
Leu Lys Val Leu Glu Ser Asp Leu Glu Gly Ile Leu Ala Gln Thr Glu
          805          810          815
Ser Ala Glu Ser Leu Leu Thr Gln Glu Glu Leu Pro Ile Leu Ala Thr
          820          825          830
Arg Gly Ala Leu Glu Lys Ala Val Phe Lys Gly Ser Leu Cys Cys Ala
          835          840          845
Leu Ala Ser Lys Ala Lys Pro Tyr Phe Glu Glu Asp Pro Arg Phe Gln
850          855          860
Asp Ser Asp Thr Gln Leu Arg Ala Leu Thr Leu Arg Leu Gln Glu Ala
865          870          875          880
Lys Ala Ser Leu Glu Glu Glu Ile Lys Arg Phe Ser Asn Leu Glu Asn
          885          890          895
Asp Ile Ala Glu Glu Arg Arg Leu Leu Lys Glu Ser Lys Gln Thr Phe

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Cys Leu Phe Ala Val Phe Ala Leu Ile Thr Ala Ala Val Glu Asp Glu
 20 25 30
 Leu Lys Leu Ser Ile Ser Ile Ala Arg Pro Val Met Ala Met Ser Ser
 35 40 45
 Leu Glu Ala Ile Ser Leu Val Pro Lys Ser Lys Thr Lys Cys Asp Pro
 50 55 60
 Gly Asp Cys Val Asn Phe Glu Thr Val Thr Ser Ala Pro Ser Leu Ile
 65 70 75 80
 Thr Lys Tyr Pro Ala Asp Arg Leu Thr Phe
 85 90
 <210>17
 <211>1003
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>17
 Lys Ser Phe Arg Tyr Asn Leu Ser Leu Ile Phe Ser Phe Leu Val Val
 1 5 10 15
 Ile Pro Leu Thr Asp Ser Thr Thr Ser Ser Leu Ser Thr Ser Leu Leu
 20 25 30
 Asp Glu Gly Asn Pro Gln Ser Met Arg Lys Leu Arg Ile Leu Ala Ile
 35 40 45
 Val Leu Ile Ala Leu Ser Ile Ile Leu Ile Ala Gly Gly Val Val Leu
 50 55 60
 Leu Thr Val Ala Ile Pro Gly Leu Ser Ser Val Ile Ser Ser Pro Ala
 65 70 75 80
 Gly Met Gly Ala Cys Ala Leu Gly Cys Val Met Leu Ala Leu Gly Ile
 85 90 95
 Asp Val Leu Leu Lys Lys Arg Glu Val Pro Ile Val Leu Ala Ser Val
 100 105 110
 Thr Thr Thr Pro Gly Thr Gly Ser Pro Arg Ser Gly Ile Ser Ile Ser
 115 120 125
 Gly Ala Asp Ser Thr Ile Arg Ser Leu Pro Thr Tyr Leu Leu Asp Glu
 130 135 140
 Gly His Pro Gln Ser Met Arg Lys Leu Arg Ile Leu Ala Ile Val Leu
 145 150 155 160
 Ile Val Phe Ser Ile Ile Leu Ile Ala Ser Gly Val Val Leu Leu Thr
 165 170 175
 Val Ala Ile Pro Gly Leu Ser Ser Val Ile Ser Ser Pro Ala Gly Met
 180 185 190
 Gly Ala Cys Ala Leu Gly Cys Val Met Leu Ala Leu Gly Ile Asp Val
 195 200 205
 Leu Leu Lys Lys Arg Glu Val Pro Ile Val Leu Ala Ser Val Thr Thr
 210 215 220
 Thr Pro Gly Thr Gly Ser Pro Arg Ser Gly Ile Ser Ile Ser Gly Ala
 225 230 235 240
 Asp Ser Thr Ile Arg Ser Leu Pro Thr Tyr Pro Leu Asp Glu Gly His
 245 250 255
 Pro Gln Ser Met Arg Lys Leu Arg Ile Leu Ala Ile Val Leu Ile Val
 260 265 270
 Phe Ser Ile Ile Leu Ile Ala Ser Gly Val Val Leu Leu Thr Val Ala
 275 280 285
 Ile Pro Gly Leu Ser Ser Ile Ile Ser Ser Pro Ala Glu Met Gly Ala
 290 295 300
 Cys Ala Leu Gly Cys Val Met Leu Ala Leu Gly Ile Asp Val Leu Leu
 305 310 315 320
 Lys Lys Arg Glu Val Pro Ile Val Val Pro Ala Pro Ile Pro Glu Glu
 325 330 335
 Val Val Ile Asp Asp Ile Asp Glu Glu Ser Ile Arg Leu Gln Gln Glu
 340 345 350
 Ala Glu Ala Ala Leu Ala Arg Leu Pro Glu Glu Met Ser Ala Phe Glu
 355 360 365
 Gly Tyr Ile Lys Val Val Glu Ser His Leu Glu Asn Met Lys Ser Leu
 370 375 380
 Pro Tyr Asp Gly His Gly Leu Glu Glu Lys Thr Lys His Gln Ile Arg

465 470 475 480
 Ile Asp Ile Asp Ser Leu Ser Ser Ser Ser Thr Ala Ala Val Ile Lys
 485 490 495
 Ala Asn Thr Ala Asn Lys Gln Ile Ser Val Thr Asp Ser Ile Glu Leu
 500 505 510
 Ile Ser Pro Thr Gly Asn Ala Tyr Glu Asp Leu Arg Met Arg Asn Ser
 515 520 525
 Gln Thr Phe Pro Leu Leu Ser Leu Glu Pro Gly Ala Gly Gly Ser Val
 530 535 540
 Thr Val Thr Ala Gly Asp Phe Leu Pro Val Ser Pro His Tyr Gly Phe
 545 550 555 560
 Gln Gly Asn Trp Lys Leu Ala Trp Thr Gly Thr Gly Asn Lys Val Gly
 565 570 575
 Glu Phe Phe Trp Asp Lys Ile Asn Tyr Lys Pro Arg Pro Glu Lys Glu
 580 585 590
 Gly Asn Leu Val Pro Asn Ile Leu Trp Gly Asn Ala Val Asp Val Arg
 595 600 605
 Ser Leu Met Gln Val Gln Glu Thr His Ala Ser Ser Leu Gln Thr Asp
 610 615 620
 Arg Gly Leu Trp Ile Asp Gly Ile Gly Asn Leu Phe His Val Ser Ala
 625 630 635 640
 Ser Glu Asp Asn Ile Arg Tyr Arg His Asn Ser Gly Gly Tyr Val Leu
 645 650 655
 Ser Val Asn Asn Glu Ile Thr Pro Lys His Tyr Thr Ser Met Ala Phe
 660 665 670
 Ser Gln Leu Phe Ser Arg Asp Lys Asp Tyr Ala Val Ser Asn Asn Glu
 675 680 685
 Tyr Arg Met Tyr Leu Gly Ser Tyr Leu Tyr Gln Tyr Thr Thr Ser Leu
 690 695 700
 Gly Asn Ile Phe Arg Tyr Ala Ser Arg Asn Pro Asn Val Asn Val Gly
 705 710 715 720
 Ile Leu Ser Arg Arg Phe Leu Gln Asn Pro Leu Met Ile Phe His Phe
 725 730 735
 Leu Cys Ala Tyr Gly His Ala Thr Asn Asp Met Lys Thr Asp Tyr Ala
 740 745 750
 Asn Phe Pro Met Val Lys Asn Ser Trp Arg Asn Asn Cys Trp Ala Ile
 755 760 765
 Glu Cys Gly Gly Ser Met Pro Leu Leu Val Phe Glu Asn Gly Arg Leu
 770 775 780
 Phe Gln Gly Ala Ile Pro Phe Met Lys Leu Gln Leu Val Tyr Ala Tyr
 785 790 795 800
 Gln Gly Asp Phe Lys Glu Thr Thr Ala Asp Gly Arg Arg Phe Ser Asn
 805 810 815
 Gly Ser Leu Thr Ser Ile Ser Val Pro Leu Gly Ile Arg Phe Glu Lys
 820 825 830
 Leu Ala Leu Ser Gln Asp Val Leu Tyr Asp Phe Ser Phe Ser Tyr Ile
 835 840 845
 Pro Asp Ile Phe Arg Lys Asp Pro Ser Cys Glu Ala Ala Leu Val Ile
 850 855 860
 Ser Gly Asp Ser Trp Leu Val Pro Ala Ala His Val Ser Arg His Ala
 865 870 875 880
 Phe Val Gly Ser Gly Thr Gly Arg Tyr His Phe Asn Asp Tyr Thr Glu
 885 890 895
 Leu Leu Cys Arg Gly Ser Ile Glu Cys Arg Pro His Ala Arg Asn Tyr
 900 905 910
 Asn Ile Asn Cys Gly Ser Lys Phe Arg Phe
 915 920
 <210>16
 <211>90
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>16
 Ala Leu Pro Val Gly Glu Ile Ser Ser Ile Glu Ser Val Thr Asp Ile
 1 5 10 15

<210>15

<211>922

<212>PRT

<213>Chlamydia pneumoniae

<400>15

Met Arg Phe Ser Leu Cys Gly Phe Pro Leu Val Phe Ser Phe Thr Leu
 1 5 10 15
 Leu Ser Val Phe Asp Thr Ser Leu Ser Ala Thr Thr Ile Ser Leu Thr
 20 25 30
 Pro Glu Asp Ser Phe His Gly Asp Ser Gln Asn Ala Glu Arg Ser Tyr
 35 40 45
 Asn Val Gln Ala Gly Asp Val Tyr Ser Leu Thr Gly Asp Val Ser Ile
 50 55 60
 Ser Asn Val Asp Asn Ser Ala Leu Asn Lys Ala Cys Phe Xaa Val Thr
 65 70 75 80
 Ser Gly Ser Val Thr Phe Ala Gly Asn His His Gly Xaa Tyr Phe Asn
 85 90 95
 Asn Ile Ser Ser Gly Thr Thr Lys Glu Gly Ala Val Leu Cys Cys Gln
 100 105 110
 Asp Pro Gln Ala Thr Ala Arg Phe Ser Gly Phe Ser Thr Leu Ser Phe
 115 120 125
 Asn Gln Ser Pro Gly Asp Ile Lys Glu Gln Gly Cys Leu Tyr Ser Lys
 130 135 140
 Asn Ala Leu Met Leu Leu Asn Asn Tyr Val Val Arg Phe Glu Gln Asn
 145 150 155 160
 Gln Ser Lys Thr Lys Gly Gly Ala Ile Ser Gly Ala Asn Val Thr Ile
 165 170 175
 Val Gly Asn Tyr Asp Ser Val Ser Phe Tyr Gln Asn Ala Ala Thr Phe
 180 185 190
 Gly Gly Ala Ile His Ser Ser Gly Pro Leu Gln Ile Ala Val Asn Gln
 195 200 205
 Ala Glu Ile Arg Phe Ala Gln Asn Thr Ala Lys Asn Gly Ser Gly Gly
 210 215 220
 Ala Leu Tyr Ser Asp Gly Asp Ile Asp Ile Asp Gln Asn Ala Tyr Val
 225 230 235 240
 Leu Phe Arg Glu Asn Glu Ala Leu Thr Thr Ala Ile Gly Lys Gly Gly
 245 250 255
 Ala Val Cys Cys Leu Pro Thr Ser Gly Ser Ser Thr Pro Val Pro Ile
 260 265 270
 Val Thr Phe Ser Asp Asn Lys Gln Leu Val Phe Glu Arg Asn His Ser
 275 280 285
 Ile Met Gly Gly Gly Ala Ile Tyr Ala Arg Lys Leu Ser Ile Ser Ser
 290 295 300
 Gly Gly Pro Thr Leu Phe Ile Asn Asn Ile Ser Tyr Ala Asn Ser Gln
 305 310 315 320
 Asn Leu Gly Gly Ala Ile Ala Ile Asp Thr Gly Gly Glu Ile Ser Leu
 325 330 335
 Ser Ala Glu Lys Gly Thr Ile Thr Phe Gln Gly Asn Arg Thr Ser Leu
 340 345 350
 Pro Phe Leu Asn Gly Ile His Leu Leu Gln Asn Ala Lys Phe Leu Lys
 355 360 365
 Leu Gln Ala Arg Asn Gly Tyr Ser Ile Glu Phe Tyr Asp Pro Ile Thr
 370 375 380
 Ser Glu Ala Asp Gly Ser Thr Gln Leu Asn Ile Asn Gly Asp Pro Lys
 385 390 395 400
 Asn Lys Glu Tyr Thr Gly Thr Ile Leu Phe Ser Gly Glu Lys Ser Leu
 405 410 415
 Ala Asn Asp Pro Arg Asp Phe Lys Ser Thr Ile Pro Gln Asn Val Asn
 420 425 430
 Leu Ser Ala Gly Tyr Leu Val Ile Lys Glu Gly Ala Glu Val Thr Val
 435 440 445
 Ser Lys Phe Thr Gln Ser Pro Gly Ser His Leu Val Leu Asp Leu Gly
 450 455 460
 Thr Lys Leu Ile Ala Ser Lys Glu Asp Ile Ala Ile Thr Gly Leu Ala

WO 99/27105

PCT/IB98/01890

Glu Ile Cys Gln Lys Cys Cys Ser Arg Arg Ser Ile Met Ser Ala Val
 1 5 10 15
 Tyr Ala Asp Trp Glu Ser Val Ile Gly Leu Glu Val His Val Glu Leu
 20 25 30
 Asn Thr Ala Ser Lys Leu Phe Ser Ser Ala Leu Asn Arg Phe Gly Asp
 35 40 45
 Glu Pro Asn Thr Asn Ile Ser Thr Val Cys Thr Gly Leu Pro Gly Ser
 50 55 60
 Leu Pro Val Leu Asn Gln Ser Ala Val Glu Lys Ala Val Leu Phe Gly
 65 70 75 80
 Cys Ala Val Glu Gly Glu Ile Ser Leu Leu Ser Arg Phe Asp Arg Lys
 85 90 95
 Ser Tyr Phe Tyr Pro Asp Ser Pro Arg Asn Phe Gln Ile Thr Gln Phe
 100 105 110
 Glu His Pro Ile Ile Arg Gly Gly Arg Ile Lys Ala Ile Val Gln Gly
 115 120 125
 Glu Glu Arg Tyr Phe Glu Leu Ala Gln Thr His Ile Glu Asp Asp Ala
 130 135 140
 Gly Met Leu Lys His Phe Gly Glu Phe Ala Gly Val Asp Tyr Asn Arg
 145 150 155 160
 Ala Gly Val Pro Leu Ile Glu Ile Val Ser Lys Pro Cys Met Phe Cys
 165 170 175
 Pro Glu Asp Gly Cys Cys Tyr Ala Thr Ser Leu Val Ser Leu Leu Asp
 180 185 190
 Tyr Ile Gly Ile Ser Asp Cys Asn Met Glu Glu Gly Ser Ile Arg Phe
 195 200 205
 Asp Val Asn Val Ser Val Arg Pro Lys Gly Ser Pro Glu Leu Arg Asn
 210 215 220
 Lys Val Glu Ile Lys Asn Met Asn Ser Phe Ala Phe Met Ala Gln Ala
 225 230 235 240
 Leu Glu Ala Glu Lys Gln Arg Gln Ile Asp Glu Tyr Leu Asn Gln Pro
 245 250 255
 Asn Lys Asp Pro Lys Leu Val Ile Pro Ala Ala Thr Tyr Arg Trp Asp
 260 265 270
 Pro Glu Lys Lys Lys Thr Val Leu Met Arg Leu Lys Glu Ser Ala Glu
 275 280 285
 Asp Tyr Lys Tyr Phe Pro Glu Pro Asp Leu Pro Thr Leu Gln Leu Thr
 290 295 300
 Glu Ser Tyr Ile Glu Arg Ile Arg Lys Thr Leu Pro Glu Leu Pro Tyr
 305 310 315 320
 Asp Lys Tyr His Arg Tyr Ile Gln Glu Tyr Gly Leu Ser Glu Asp Ile
 325 330 335
 Ala Ser Ile Leu Ile Ser Asp Lys Asn Ile Ala Thr Phe Phe Glu Val
 340 345 350
 Ala Cys Lys Asp Cys Lys Asn Phe Arg Ser Leu Ser Asn Trp Val Thr
 355 360 365
 Val Glu Phe Gly Gly Arg Cys Lys Thr Leu Gly Val Lys Leu Pro Ser
 370 375 380
 Ser Gly Ile Phe Pro Glu Gly Val Ala Gln Leu Val Asn Ala Ile Asp
 385 390 395 400
 Gln Gly Val Ile Thr Gly Lys Ile Ala Lys Glu Ile Ala Asp Leu Met
 405 410 415
 Met Glu Ser Pro Gly Lys Asn Pro Glu Glu Ile Leu Lys Glu Lys Pro
 420 425 430
 Glu Leu Leu Pro Met Ser Asp Glu Gly Glu Leu Gln Lys Ile Ile Ala
 435 440 445
 Glu Val Val Leu Ala Asn Pro Glu Ser Ile Val Asp Tyr Lys Asn Gly
 450 455 460
 Lys Thr Lys Ala Leu Gly Phe Leu Val Gly Gln Ile Met Lys Arg Thr
 465 470 475 480
 Ala Gly Lys Ala Pro Lys Arg Val Asn Glu Leu Leu Leu Leu Glu
 485 490 495
 Leu Asp Lys Gly
 500

20 25 30
 Ile Glu Glu Ala Glu Gly Gln Val Gly Ala Phe Ile Ser Leu Cys Lys
 35 40 45
 Glu Gln Ala Leu Glu Gln Ala Glu Leu Ile Asp Lys Lys Arg Ser Arg
 50 55 60
 Gly Glu Pro Leu Gly Lys Leu Ala Gly Val Pro Val Gly Ile Lys Asp
 65 70 75 80
 Asn Ile His Val Thr Gly Leu Lys Thr Thr Cys Ala Ser Arg Val Leu
 85 90 95
 Glu Asn Tyr Gln Pro Pro Phe Asp Ala Thr Val Val Glu Arg Ile Lys
 100 105 110
 Lys Glu Asp Gly Ile Ile Leu Gly Lys Leu Asn Met Asp Glu Phe Ala
 115 120 125
 Met Gly Ser Thr Thr Leu Tyr Ser Ala Phe His Pro Thr His Asn Pro
 130 135 140
 Trp Asp Leu Ser Arg Val Pro Gly Gly Ser Ser Gly Gly Ser Ala Ala
 145 150 155 160
 Ala Val Ser Ala Arg Phe Cys Pro Val Ala Leu Gly Ser Asp Thr Gly
 165 170 175
 Gly Ser Ile Arg Gln Pro Ala Ala Phe Cys Gly Val Val Gly Phe Lys
 180 185 190
 Pro Ser Tyr Gly Ala Val Ser Arg Tyr Gly Leu Val Ala Phe Ala Ser
 195 200 205
 Ser Leu Asp Gln Ile Gly Pro Leu Ala Asn Thr Val Glu Asp Val Ala
 210 215 220
 Leu Met Met Asp Val Phe Ser Gly Arg Asp Pro Lys Asp Ala Thr Ser
 225 230 235 240
 Arg Glu Phe Phe Arg Asp Ser Phe Met Ser Lys Leu Ser Thr Glu Val
 245 250 255
 Pro Lys Val Ile Gly Val Pro Arg Thr Phe Leu Glu Gly Leu Arg Asp
 260 265 270
 Asp Ile Arg Glu Asn Phe Phe Ser Ser Leu Ala Ile Phe Glu Gly Glu
 275 280 285
 Gly Thr His Leu Val Asp Val Glu Leu Asp Ile Leu Ser His Ala Val
 290 295 300
 Ser Ile Tyr Tyr Ile Leu Ala Ser Ala Glu Ala Ala Thr Asn Leu Ala
 305 310 315 320
 Arg Phe Asp Gly Val Arg Tyr Gly Tyr Arg Ser Pro Gln Ala His Thr
 325 330 335
 Ile Ser Gln Leu Tyr Asp Leu Ser Arg Gly Glu Gly Phe Gly Lys Glu
 340 345 350
 Val Met Arg Arg Ile Leu Leu Gly Asn Tyr Val Leu Ser Ala Glu Arg
 355 360 365
 Gln Asn Val Tyr Tyr Lys Lys Ala Thr Ala Val Arg Ala Lys Ile Val
 370 375 380
 Lys Ala Phe Arg Thr Ala Phe Glu Lys Cys Glu Ile Leu Ala Met Pro
 385 390 395 400
 Val Cys Ser Ser Pro Ala Phe Glu Ile Gly Glu Ile Leu Asp Pro Val
 405 410 415
 Thr Leu Tyr Leu Gln Asp Ile Tyr Thr Val Ala Met Asn Leu Ala Tyr
 420 425 430
 Leu Pro Ala Ile Ala Val Pro Ser Gly Phe Ser Lys Glu Gly Leu Pro
 435 440 445
 Leu Gly Leu Gln Ile Ile Gly Gln Gln Gly Gln Asp Gln Gln Val Cys
 450 455 460
 Gln Val Gly Tyr Ser Phe Gln Glu His Ala Gln Ile Lys Gln Leu Phe
 465 470 475 480
 Ser Lys Arg Tyr Ala Lys Ser Val Val Leu Gly Gly Gln Ser
 485 490

<210>14

<211>500

<212>PRT

<213>Chlamydia pneumoniae

<400>14

WO 99/27105

PCT/IB98/01890

Phe Thr Ser Cys Pro Ala Ile Cys Glu Asp Gly Trp Leu Ser His Pro
 145 150 155 160
 Thr Lys Asp Thr Thr Phe Asp Gln Ala Met Ala Ile Glu Lys Asn Ile
 165 170 175
 Leu Phe Val Gly Ser Leu Lys Asn Gly Gln Pro Met Asp Ala Ala Leu
 180 185 190
 Glu Val Leu Leu Ser Gly Ile Ser Ser Pro Pro Ser Gln Ile Ile Tyr
 195 200 205
 Val Asp Gln Asp Ala Glu Arg Leu Arg Ser Ile Gly Ala Phe Cys Lys
 210 215 220
 Lys Ala Asn Ile Tyr Phe Ile Gly Met Leu Tyr Thr Pro Ala Lys Gln
 225 230 235 240
 Arg Val Glu Ser Tyr Asn Pro Lys Leu Thr Ala Ile Gln Trp Ser Gln
 245 250 255
 Ile Arg Lys Asn Leu Ser Asp Glu Tyr Tyr Glu Ser Leu Leu Ser Tyr
 260 265 270
 Val Lys Ser Lys Gly
 275

<210>11

<211>109

<212>PRT

<213>Chlamydia pneumoniae

<400>11

Lys Arg Leu Lys Asp Glu Ile Lys Tyr Thr Ser Leu Arg Arg Lys Ala
 1 5 10 15
 Met Leu Gly Lys Ile Ile Arg Gly Leu Ser Ser Leu Ile Val Ile Leu
 20 25 30
 Cys Ala Leu Asn Val Gly Leu Ile Gly Ile Thr His Asn Lys Leu Asn
 35 40 45
 Ile Ile Ala Lys Leu Cys Gly Gly Val Ser Thr Pro Ala Thr Gln Ile
 50 55 60
 Thr Tyr Ile Ile Ile Gly Ile Ala Gly Val Ile Cys Leu Leu Ser Phe
 65 70 75 80
 Cys Pro Phe Cys Ser Lys Lys Ser Arg His Ser His Gly Asp Ser Cys
 85 90 95
 Ser Ser Gly Gly Cys His Ser His His Ser Asp Lys Asn
 100 105

<210>12

<211>102

<212>PRT

<213>Chlamydia pneumoniae

<400>12

His Met Glu Gln Phe His Leu Asp Arg Glu Glu Ile Leu Leu Leu Ala
 1 5 10 15
 Lys Ala Ser Ala Leu Gln Leu Ser Glu Glu Leu Ile Gln Glu Tyr Gln
 20 25 30
 Thr Ser Leu Ser Ala Val Ile Thr Ser Met Lys Glu Ala Leu Ala Ile
 35 40 45
 Glu Ile Asp Asp Ala Asp Ser Cys Glu Ser Leu Phe Met His Val Val
 50 55 60
 Asn Val Glu Asp Leu Arg Glu Asp Ser Val Thr Ser Asp Phe Asn Arg
 65 70 75 80
 Glu Glu Phe Leu Arg Asn Val Pro Glu Ser Leu Gly Gly Leu Val Lys
 85 90 95
 Val Pro Ala Val Ile Lys
 100

<210>13

<211>494

<212>PRT

<213>Chlamydia pneumoniae

<400>13

Lys Ile Met Tyr Arg Tyr Ser Ala Leu Glu Leu Ala Lys Ala Val Thr
 1 5 10 15
 Leu Gly Glu Leu Thr Ala Thr Gly Val Thr Gln His Phe Phe His Arg

WO 99/27105

PCT/IB98/01890

<212>PRT

<213>Chlamydia pneumoniae

<400>9

Lys Lys Asp Tyr Ile Leu His Ala Asn Trp Cys Cys Trp Lys Gln Met
 1 5 10 15
 Leu Lys Ile Gln Lys Lys Arg Met Cys Val Ser Val Val Ile Thr Val
 20 25 30
 Gly Ala Ile Val Gly Phe Phe Asn Ser Ala Asp Ala Ala Pro Lys Lys
 35 40 45
 Lys Lys Ile Pro Ile Gln Ile Leu Tyr Ser Phe Thr Lys Val Ser Ser
 50 55 60
 Tyr Leu Lys Asn Glu Asp Ala Ser Thr Ile Phe Cys Val Asp Val Asp
 65 70 75 80
 Arg Gly Leu Leu Gln His Arg Tyr Leu Gly Ser Pro Gly Trp Gln Glu
 85 90 95
 Thr Arg Arg Arg Gln Leu Phe Lys Ser Leu Glu Asn Gln Ser Tyr Gly
 100 105 110
 Asn Glu Arg Leu Gly Glu Glu Thr Leu Ala Ile Asp Ile Phe Arg Asn
 115 120 125
 Lys Glu Cys Leu Glu Ser Glu Ile Pro Glu Gln Met Glu Ala Ile Leu
 130 135 140
 Ala Asn Ser Ser Ala Leu Val Leu Gly Ile Ser Ser Phe Gly Ile Thr
 145 150 155 160
 Gly Ile Pro Ala Thr Leu His Ser Leu Leu Arg Gln Asn Leu Ser Phe
 165 170 175
 Gln Lys Arg Ser Ile Ala Ser Glu Ser Phe Leu Leu Lys Ile Asp Ser
 180 185 190
 Ala Pro Ser Asp Ala Ser Val Phe Tyr Lys Gly Val Leu Phe Arg Gly
 195 200 205
 Glu Thr Ala Ile Val Asp Ala Leu Ser Gln Leu Phe Ala Gln Leu Asp
 210 215 220
 Leu Ser Pro Lys Lys Ile Phe Leu Gly Glu Asp Pro Glu Val Val
 225 230 235 240
 Gln Ala Val Gly Ser Ala Cys Ile Gly Trp Gly Met Asn Phe Leu Gly
 245 250 255
 Leu Val Tyr Tyr Pro Ala Gln Glu Ser Leu Phe Ser Tyr Val His Pro
 260 265 270
 Tyr Ser Thr Ala Thr Glu Leu Gln Glu Ala Gln Gly Leu Gln Val Ile
 275 280 285
 Ser Asp Glu Val Ala Gln Leu Thr Leu Asn Ala Leu Pro Lys Met Asn
 290 295 300

<210>10

<211>277

<212>PRT

<213>Chlamydia pneumoniae

<400>10

Arg Ile Phe Met Arg Arg Tyr Leu Phe Met Val Leu Ala Leu Cys Leu
 1 5 10 15
 Tyr Arg Ala Ala Pro Leu Glu Ala Val Val Ile Lys Ile Thr Asp Ala
 20 25 30
 Gln Ala Val Leu Lys Phe Ala Arg Glu Lys Thr Leu Val Cys Phe Asn
 35 40 45
 Ile Glu Asp Thr Val Val Phe Pro Lys Gln Met Val Gly Gln Ser Ala
 50 55 60
 Trp Leu Tyr Asn Arg Glu Leu Asp Leu Lys Thr Thr Leu Ser Glu Glu
 65 70 75 80
 Gln Ala Arg Glu Gln Ala Phe Leu Glu Trp Met Gly Ile Ser Phe Leu
 85 90 95
 Val Asp Tyr Glu Leu Val Ser Ala Asn Leu Arg Asn Val Leu Thr Gly
 100 105 110
 Leu Ser Leu Lys Arg Ser Trp Val Leu Gly Ile Ser Gln Arg Pro Val
 115 120 125
 His Leu Ile Lys Asn Thr Leu Arg Ile Leu Arg Ser Phe Asn Ile Asp
 130 135 140

WO 99/27105

PCT/IB98/01890

Lys Gly Thr Thr Met Val Cys Pro Asn Asn Ser Trp Phe Arg Met Cys
 1 5 10 15
 Gly Asn Phe Asn Cys Glu Trp Val Glu Val Thr Thr Thr Glu Glu Thr
 20 25 30
 Thr Arg Gln Ser Ala Ser Asp Ile Ser Glu Glu Ala Gly Ser Ser Gly
 35 40 45
 Gly Ala Ala Pro Ile Thr Thr Gln Pro Thr Lys Ile Thr Lys Val Glu
 50 55 60
 Lys Arg Val Gln Phe Asn Thr Ala Gln Gly Asp Glu Ser Thr Ile His
 65 70 75 80
 Met Ile Gln Glu Ala Gly Glu Leu Val Asp Ser Ile Leu Ser His Arg
 85 90 95
 Arg Thr Gln Gly Cys Thr Glu Tyr Cys Tyr Asp Ser Tyr Ala Thr Gly
 100 105 110
 Cys Gly Gln Arg Cys Gly Ser Phe Gly Arg Leu Ile Cys Gly Thr Tyr
 115 120 125
 Lys Ala Cys Cys Leu Asp Arg Glu Asp Asn Gln Val Ala Gly Leu Val
 130 135 140
 His Glu Cys Glu Gln Thr His Gly Pro Ile Ala Val Ala Leu Ala Ala
 145 150 155 160
 Lys Thr Met Gly Leu Asn Leu Met Glu Leu Val Glu Lys Asn Thr Ile
 165 170 175
 Leu Ser Glu Glu Gln Lys Asn Glu Phe Arg Gln His Cys Ser Glu Ala
 180 185 190
 Lys Thr Gln Leu Tyr Gly Thr Met Gln Ser Leu Ser Gln Asn Phe Phe
 195 200 205
 Leu Glu Gly Val Asn Ser Ile Arg Glu Arg Gly Leu Asp Asp Ser Leu
 210 215 220
 Val Gln Ala Val Leu Ser Phe Ile Ala Thr Arg Ser Trp Glu Lys Thr
 225 230 235 240
 Ile Glu Ser Glu Glu Ala Ser Gly Thr Ser Ser Ala Ser Asn Ser Thr
 245 250 255
 Arg Ile Pro Ala Cys Tyr Ile Leu Asn Thr Ser Pro Leu Thr Thr Ser
 260 265 270
 Arg Leu Ser Cys Gly Ser Arg Asp Ala Arg Arg Pro Ser Val Gly
 275 280 285
 Ala Glu Pro Gln Tyr Val Ala Lys Lys Tyr Asn Asp Asn Gly Met Ala
 290 295 300
 Arg Gln Leu Gly Lys Ile Gln Val Thr Asn Leu Lys Thr Gly Asp Phe
 305 310 315 320
 Ser Ala Leu Gly Pro Phe Gly Leu Leu Ile Val Lys Met Leu Asn Ser
 325 330 335
 Phe Leu Leu Ser Ala Ser Gln Ser Thr Ser Ser Ile Leu Lys His Thr
 340 345 350
 Gly Gly Glu Ile Cys Tyr Thr Cys Pro Asn Phe Arg Asp Ile Val Val
 355 360 365
 Leu Leu Met Leu Ala Ile Gly Tyr Cys Pro Ala Asn Thr Asp Glu Thr
 370 375 380
 Ser Val Val Asp Ile His Met Ile Asp Asp Pro Ile Met Thr Ile Phe
 385 390 395 400
 Tyr Arg Leu Gln Tyr Ser Tyr Arg Thr Gly Lys Thr Ser Ala Ser Phe
 405 410 415
 Leu Lys Lys Lys Pro Ser Leu Val Arg Gln Glu Ser Leu Asp Cys Pro
 420 425 430
 Thr Pro Ala Glu Ser Val Pro Leu Met Ser Ser Leu Glu Glu Asp
 435 440 445
 Glu Asn Glu Asp Asp Asp Glu Asp Gly Asn Leu Ala Tyr Gln Gln Arg
 450 455 460
 Ile Leu Glu Cys Ser Gly His Leu Gln Thr Leu Phe Leu Gly Ile Lys
 465 470 475 480
 Ile Asn Lys Glu

<210>9

<211>304

<400>7
 Arg Arg Ser Leu Met Thr Phe Pro Cys Gly Asn Cys Asn Cys Tyr Tyr
 1 5 10 15
 Arg Glu Thr Pro Pro Pro Asn Pro Gly Gly Glu Asp Ile Pro Leu Gln
 20 25 30
 Glu Gly Gly Gln Ser Gly Ser Gln Gly Gly Arg Val Ile Thr Gln Gln
 35 40 45
 Pro Gly Thr Gly Gly Arg Glu Met Gly Ile Ser Leu Gly Ser Asp Asn
 50 55 60
 Val Leu Gly Met Val Glu Gln Ala Gly Ser Leu Leu Asn Asn Leu Leu
 65 70 75 80
 Asp Ser Ala Arg Met Gln Arg Leu Gly His Tyr Cys Tyr Arg Thr Gly
 85 90 95
 Thr Pro Trp Cys Arg Glu His Cys Pro Gly Phe Leu Gln Trp Ile Trp
 100 105 110
 Gly Gly Cys Cys Ala Cys Cys Leu Glu Thr Val Asp Asp Pro Asp Asn
 115 120 125
 Pro Ser Ala Gln Phe Leu Gln Gln Leu Ile Gln Gln Tyr Gly Pro Ile
 130 135 140
 Cys Val Gly Met Ser Phe Gln Gln Leu Pro His Cys Thr Gln Lys Ile
 145 150 155 160
 Glu Gln Gly Glu Pro Leu Gly Asp Gly Asp Lys Gln Glu Val Glu Asn
 165 170 175
 Gly Cys Lys Leu His Arg Glu Leu Leu Lys Ala Ala Gln Pro Arg Cys
 180 185 190
 Met Gly Glu Ser Leu Val Lys Leu Leu Gln Asn Asn Gly Leu Gly Glu
 195 200 205
 Asp Met Gln Gln Thr Pro Pro Trp Ser Leu Ile Leu Gln Ala Val Ser
 210 215 220
 Glu Gly Ala Leu Ser Phe Val Thr Ser Ser Asp Asn Pro Pro Thr Cys
 225 230 235 240
 Trp Ile Leu Gln Pro Glu Gln Gln Pro Cys Pro Pro Pro Thr Asp
 245 250 255
 Glu Glu Gln Leu Gln Gly Ala Val Gly Gly Ala Pro Ala Pro Gln Gln
 260 265 270
 Lys Lys His Pro Ala Gln Glu Cys Arg Val Thr Cys Lys Leu Asn Phe
 275 280 285
 Arg Thr Leu Leu Gln Lys Leu Ser Arg Leu Glu Val Leu Ser Leu Glu
 290 295 300
 Ser Gly Tyr Lys Gly Pro Leu Gly Gln Ala Ala Lys Gln Ile Val Asp
 305 310 315 320
 Leu Ile Lys Lys Ser Leu Lys Arg Leu Val Ala Ser Asp Leu Ala Thr
 325 330 335
 Phe Leu Gly Pro Gly Ile Gly Leu Ser Leu Glu Ser Gln Val Phe Glu
 340 345 350
 Val Leu Val Leu Leu Cys Leu Leu Ser Lys Gly Tyr Leu Pro Leu Asp
 355 360 365
 Pro Leu His Pro Glu Gln Thr Val Leu Asp Pro Arg Val Gln Gly Pro
 370 375 380
 Trp Gln Arg Ile Leu Arg Lys Val Leu Val Thr Thr Thr Ala Gly Glu
 385 390 395 400
 Asn Ile Trp Arg Gln Thr Gln Gly Glu Ala Pro Arg Gln Ala Pro Pro
 405 410 415
 Pro Pro Asp Pro Trp Asp Asp Asp Glu Ile Glu Arg Asp Gly Ile Val
 420 425 430
 Thr Gly Gly Gly Phe Gly Ile Pro Cys Gln Cys Leu Arg Cys Trp Arg
 435 440 445
 Lys Leu Pro Thr Glu Lys Arg Pro Asn Arg Trp Leu
 450 455 460
 <210>8
 <211>484
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>8

WO 99/27105

PCT/IB98/01890

1 5 10 15
 Gln Asn Asn Leu Arg Asp Gln Leu Lys Glu Lys Asn Phe Ile Phe Ser
 20 25 30
 Gln Pro Gln Asn Thr Val Phe Gln Ala Arg Ser Asn Thr Val Thr Cys
 35 40 45
 Thr Leu Tyr Pro Ser Gly Lys Leu Val Ile Gln Gly Lys Gly Ser Glu
 50 55 60
 Glu Phe Ile Glu Phe Phe Leu Glu Pro Glu Ile Leu His Thr Phe Thr
 65 70 75 80
 His Ala Arg Val Glu Gln Asp Leu Arg Pro Arg Leu Gly Val Asp Glu
 85 90 95
 Ser Gly Lys Gly Asp Phe Phe Gly Pro Leu Cys Ile Ala Val Tyr
 100 105 110
 Ala Ser Asn Ala Glu Ile Leu Lys Lys Leu Tyr Glu Asn Lys Val Gln
 115 120 125
 Asp Ser Lys Asn Leu Lys Asp Thr Lys Ile Ala Ser Leu Ala Arg Ile
 130 135 140
 Ile Arg Ser Leu Cys Val Cys Asp Val Ile Ile Leu Tyr Pro Glu Lys
 145 150 155 160
 Tyr Asn Glu Leu Tyr Gly Lys Phe Gln Asn Leu Asn Thr Leu Leu Ala
 165 170 175
 Trp Ala His Ala Thr Val Ile Asn Asn Leu Ala Pro Lys Pro Ala Gly
 180 185 190
 Asp Val Phe Ala Ile Ser Asp Gln Phe Ala Ala Ser Glu Tyr Thr Leu
 195 200 205
 Leu Lys Ala Leu Gln Lys Lys Glu Thr Asp Ile Thr Leu Ile Gln Lys
 210 215 220
 Pro Arg Ala Glu Gln Asp Val Val Ala Ala Ala Ser Ile Leu Ala
 225 230 235 240
 Arg Asp Ala Phe Val Gln Ser Ile Gln Lys Leu Glu Glu Gln Tyr Gln
 245 250 255
 Val Gln Leu Pro Lys Gly Ala Gly Phe Asn Val Lys Ala Ala Gly Arg
 260 265 270
 Glu Ile Ala Lys Gln Arg Gly Lys Glu Leu Leu Ala Lys Ile Ser Lys
 275 280 285
 Thr His Phe Lys Thr Phe Asp Glu Ile Cys Ser Gly Lys
 290 295 300

<210>6

<211>143

<212>PRT

<213>Chlamydia pneumoniae

<400>6

Met Gln Glu His Ile His Lys Glu Leu Leu His Leu Gly Glu Ile Phe
 1 5 10 15
 Arg Ser Ser Arg Glu Ser Gln Ser Leu Ser Leu Lys Asp Val Glu Ala
 20 25 30
 Ala Thr Ser Ile Arg Tyr Ser Cys Leu Glu Ala Ile Glu Gln Gly Cys
 35 40 45
 Leu Gly Lys Leu Ile Ser Pro Val Tyr Ala Gln Gly Phe Ile Lys Lys
 50 55 60
 Tyr Ala Thr Tyr Leu Gly Leu Asp Gly Asp Ser Ile Leu Gln Glu His
 65 70 75 80
 Pro Tyr Val Met Lys Ile Phe Lys Glu Phe Ser Asp His Asn Met Glu
 85 90 95
 Met Leu Leu Asp Leu Glu Ser Met Gly Gly Arg Asn Ser Pro Glu Arg
 100 105 110
 Ala Ile His Ser Trp Ser Asn Leu Trp Trp Ala Gly Leu Ile Ile Ile
 115 120 125
 Gly Gly Ile Met Val Trp Trp Leu Gly Ser Leu Phe Ser Ile Phe
 130 135 140

<210>7

<211>460

<212>PRT

<213>Chlamydia pneumoniae

WO 99/27105

PCT/IB98/01890

Ala Glu Arg Phe Ser Glu Ala Thr Ala Glu Glu Ile Ser Ile Leu Tyr
 210 215 220
 Gly Gly Ser Val Lys Val Asp Asn Ala Gln Arg Phe Gly Gln Cys Ser
 225 230 235 240
 Asp Val Asp Gly Leu Leu Val Gly Gly Xaa Leu
 245 250

<210>3

<211>119

<212>PRT

<213>Chlamydia pneumoniae

<400>3

Ser Met Ser Leu Asn Lys Glu Ile Gly Met Thr Val Leu Phe Tyr Ala
 1 5 10 15
 Phe Leu Phe Ile Phe Leu Phe Leu Cys Val Ile Leu Cys Gly Leu Ile
 20 25 30
 Leu Val Gln Glu Ser Lys Ser Met Gly Leu Gly Ser Ser Phe Gly Val
 35 40 45
 Asp Ser Gly Asp Ser Val Phe Gly Val Ser Thr Pro Asp Ile Leu Lys
 50 55 60
 Lys Val Thr Ser Xaa Cys Ala Val Ala Phe Cys Ile Gly Cys Leu Leu
 65 70 75 80
 Leu Ser Phe Ser Thr Asn Leu Leu Gly Lys Lys Leu Asp Ala Lys Glu
 85 90 95
 Phe Leu Leu Pro Ala Ala Glu Glu Ser Asp Thr Gln Ala Ser Ser Glu
 100 105 110
 Ser Val Glu Ala Asp Glu Ser
 115

<210>4

<211>204

<212>PRT

<213>Chlamydia pneumoniae

<400>4

Val Leu Val Val Arg Asp Phe Phe Thr Glu Leu Cys Gln Ala His Val
 1 5 10 15
 Gln Thr Met Ile Arg Arg Leu Glu Tyr Tyr Gly Ser Pro Ile Leu Arg
 20 25 30
 Lys Lys Ser Ser Pro Ile Ala Glu Ile Thr Asp Glu Ile Arg Asn Leu
 35 40 45
 Val Ser Asp Met Cys Asp Thr Met Glu Ala His Arg Gly Val Gly Leu
 50 55 60
 Ala Ala Pro Gln Val Gly Lys Asn Val Ser Leu Phe Val Met Cys Val
 65 70 75 80
 Asp Arg Glu Thr Glu Asp Gly Glu Leu Ile Phe Ser Glu Ser Pro Arg
 85 90 95
 Val Phe Ile Asn Pro Val Leu Ser Asp Pro Ser Glu Thr Pro Ile Ile
 100 105 110
 Gly Lys Glu Gly Cys Leu Ser Ile Pro Gly Leu Arg Gly Glu Val Phe
 115 120 125
 Arg Pro Gln Lys Ile Thr Val Thr Ala Met Asp Leu Asn Gly Lys Ile
 130 135 140
 Phe Thr Glu His Leu Glu Gly Phe Thr Ala Arg Ile Ile Met His Glu
 145 150 155 160
 Thr Asp His Leu Asn Gly Val Leu Tyr Ile Asp Leu Met Glu Glu Pro
 165 170 175
 Lys Asp Pro Lys Lys Phe Lys Ala Ser Leu Glu Lys Ile Lys Arg Arg
 180 185 190
 Tyr Asn Thr His Leu Ser Lys Glu Glu Leu Val Ser
 195 200

<210>5

<211>301

<212>PRT

<213>Chlamydia pneumoniae

<400>5

Met Ser Cys Met Pro Pro Pro Phe Val Val Thr Leu Thr Thr Ser Ala

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gaaaaaggcc	gtagaactcg	accatagttg	tgaactttta	gagttattaa	gtgcatgcga	961500
agcacgttgt	ggaaattttg	atgctgtcta	tgaatttcaa	tcgtttcttt	cttctcgaga	961560
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acctctcaac	gatcatcata	ttgtggaagt	ggatgctctg	cttgccgctt	aaatctgatt	961680
tttttaaat	ttttattcta	tggactacaa	agccctcgtg	gctcgaagat	aacaaaaagc	961740
agaaatcagc	ttcttgggaa	cttttattcg	ttttattaa	taagatcgag	tatggtattg	961800
agaaacgttc	tcgtaaaaga	tggatttcta	gtaattacag	tgaattaaac	gacatatgtt	961860
aggttttctt	aaacgcttct	ttggttcttc	tcaagagcgt	attctaaaaa	aatttcaaaa	961920
acttgtagat	aaagtgaaca	tttatgatga	aatgctcacg	cctttatctg	atgatgaatt	961980
gcggaataag	actgcggaat	taaagcagag	atatcagaac	ggagagtctc	ttgatagcat	962040
gcttcttgaa	gcttatgggtg	tcgtgaaaaa	cgtttgcga	cgtttagcag	gcaccccgat	962100
cgaagtctcc	ggataccatc	aaagatggga	tatggttctt	tatgatgtgc	agattctagg	962160
ggccattgct	atgcacaagg	gatttattac	agagatgcag	accggggagg	ggaaaaacact	962220
cactgcagtg	atgcctctgt	atttaaatgc	tttaacaggc	aagccagtg	atttggttac	962280
tgttaacgac	tatcttgac	aacgagattg	tgaattgggt	ggatcggtac	tgcgctgggt	962340
aggacttaca	acgggagttt	tggtttcagg	aactctttta	gaaaagcgta	agaaaattta	962400
tcaatgtgat	gttgtctatg	gtacagcatc	tgagtttggt	tttgattatt	tgagagataa	962460
ttctatagct	actcgccttg	aagagcaggt	aggtagagga	tattactttg	ctatcattga	962520
tgaagtgcac	tcgatcttaa	tagatgaagc	tagaacaccc	ttaattatct	caggctcctgg	962580
agaaaaacat	aatccagtc	atttttagct	taaagaaaaa	gtcgaagtc	tagtgtattt	962640
gcaaaaagag	ctctgcagcc	gtatcgcat	agaagcacgt	cgcggttag	atagcttttt	962700
agatgttgat	attcttctta	aagataaaaa	agttcttgaa	ggcatctctg	aattttgccc	962760
cagccttttg	ttggtaagca	aaggaaatg	tttgaaatcg	gtgttacgtc	gtgtacgtga	962820
gcacccagat	cttcgtgcta	tgatcgataa	atgggatgtt	tattatcatg	ctgagcagaa	962880
taaagaagag	agcctagagc	gtctttcaga	gctctacatt	attgttgatg	agcacaataa	962940
tgattttgag	cttacagata	aaggaaatgca	cagtggtgtt	gagtatgctg	gaggctctac	963000
cgaagagttc	gtgatgatgg	atatggggca	tgagtatgct	cttatagaaa	atgatgagac	963060
cctatcacct	gcagataaga	tcaataaaaa	aattgcaatt	tctgaagaag	acaccttaag	963120

145 150 155 160
 Gly Ser Phe Ile Asp Val Arg Ser Phe Gln Asn Phe Ile Glu Leu Gly
 165 170 175
 Thr Glu Gly Ala Pro Tyr Glu Lys Arg Phe Trp Val Ala Gly Ile Ser
 180 185 190
 Asn Val Leu His Arg Ser Gly Arg Glu Asn Gln Arg Lys Phe Arg His
 195 200 205
 Val Ser Gly Gly Ala Val Val Gly Ala Ser Thr Arg Met Pro Gly Gly
 210 215 220
 Asp Thr Leu Ser Leu Gly Phe Ala Gln Leu Phe Ala Arg Asp Lys Asp
 225 230 235 240
 Tyr Phe Met Asn Thr Asn Phe Ala Lys Thr Tyr Ala Gly Ser Leu Arg
 245 250 255
 Leu Gln His Asp Ala Ser Leu Tyr Ser Val Val Ser Ile Leu Leu Gly
 260 265 270
 Glu Gly Gly Leu Arg Glu Ile Leu Leu Pro Tyr Val Ser Lys Thr Leu
 275 280 285
 Pro Cys Ser Phe Tyr Gly Gln Leu Ser Tyr Gly His Thr Asp His Arg
 290 295 300
 Met Lys Thr Glu Ser Leu Pro Pro Pro Pro Pro Thr Leu Ser Thr Asp
 305 310 315 320
 His Thr Ser Trp Gly Gly Tyr Val Trp Ala Gly Glu Leu Gly Thr Arg
 325 330 335
 Val Ala Val Glu Asn Thr Ser Gly Arg Gly Phe Phe Gln Glu Tyr Thr
 340 345 350
 Pro Phe Val Lys Val Gln Ala Val Tyr Ala Arg Gln Asp Ser Phe Val
 355 360 365
 Glu Leu Gly Ala Ile Ser Arg Asp Phe Ser Asp Ser His Leu Tyr Asn
 370 375 380
 Leu Ala Ile Pro Leu Gly Ile Lys Leu Glu Lys Arg Phe Ala Glu Gln
 385 390 395 400
 Tyr Tyr His Val Val Ala Met Tyr Ser Pro Asp Val Cys Arg Ser Asn
 405 410 415
 Pro Lys Cys Thr Thr Thr Leu Leu Ser Asn Gln Gly Ser Trp Lys Thr
 420 425 430
 Lys Gly Ser Asn Leu Ala Arg Gln Ala Gly Ile Val Gln Ala Ser Gly
 435 440 445
 Phe Arg Ser Leu Gly Ala Ala Ala Glu Leu Phe Gly Asn Phe Gly Phe
 450 455 460
 Glu Trp Arg Gly Ser Ser Arg Ser Tyr Asn Val Asp Ala Gly Ser Lys
 465 470 475 480
 Ile Lys Phe

<210>28

<211>177

<212>PRT

<213>Chlamydia pneumoniae

<400>28

Met Lys Ser Ser Phe Pro Lys Phe Val Phe Ser Thr Phe Ala Ile Phe
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 Pro Leu Ser Met Ile Ala Thr Glu Thr Val Leu Asp Ser Ser Ala Ser
 20 25 30
 Phe Asp Gly Asn Lys Asn Gly Asn Phe Ser Val Arg Glu Ser Gln Glu
 35 40 45
 Asp Ala Gly Thr Thr Tyr Leu Phe Lys Gly Asn Val Thr Leu Glu Asn
 50 55 60
 Ile Pro Gly Thr Gly Thr Ala Ile Thr Lys Ser Cys Phe Asn Asn Thr
 65 70 75 80
 Lys Gly Asp Leu Thr Phe Thr Gly Asn Gly Asn Ser Leu Leu Phe Gln
 85 90 95
 Thr Val Asp Ala Gly Thr Val Ala Gly Ala Ala Val Asn Ser Ser Val
 100 105 110
 Val Asp Lys Ser Thr Thr Phe Ile Gly Phe Ser Ser Leu Ser Phe Ile
 115 120 125

Ala Ser Pro Gly Ser Ser Ile Thr Thr Gly Lys Gly Ala Val Ser Cys
 130 135 140
 Ser Thr Gly Ser Leu Ser Leu Thr Lys Met Ser Val Cys Ser Ser Ala
 145 150 155 160
 Lys Thr Phe Gln Arg Ile Met Ala Val Leu Ser Pro Gln Lys Leu Phe
 165 170 175
 His

 <210>29
 <211>597
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>29
 Leu Glu Phe Asp Lys Asn Val Ser Leu Leu Phe Ser Lys Asn Phe Ser
 1 5 10 15
 Thr Asp Asn Gly Gly Ala Ile Thr Ala Lys Thr Leu Ser Leu Thr Gly
 20 25 30
 Thr Thr Met Ser Ala Leu Phe Ser Glu Asn Thr Ser Ser Lys Lys Gly
 35 40 45
 Gly Ala Ile Gln Thr Ser Asp Ala Leu Thr Ile Thr Gly Asn Gln Gly
 50 55 60
 Glu Val Ser Phe Ser Asp Asn Thr Ser Ser Asp Ser Gly Ala Ala Ile
 65 70 75 80
 Phe Thr Glu Ala Ser Val Thr Ile Ser Asn Ala Lys Val Ser Phe
 85 90 95
 Ile Asp Asn Lys Val Thr Gly Ala Ser Ser Ser Thr Thr Gly Asp Met
 100 105 110
 Ser Gly Gly Ala Ile Cys Ala Tyr Lys Thr Ser Thr Asp Thr Lys Val
 115 120 125
 Thr Leu Thr Gly Asn Gln Met Leu Leu Phe Ser Asn Asn Thr Ser Thr
 130 135 140
 Thr Ala Gly Gly Ala Ile Tyr Val Lys Lys Leu Glu Leu Ala Ser Gly
 145 150 155 160
 Gly Leu Thr Leu Phe Ser Arg Asn Ser Val Asn Gly Gly Thr Ala Pro
 165 170 175
 Lys Gly Gly Ala Ile Ala Ile Glu Asp Ser Gly Glu Leu Ser Leu Ser
 180 185 190
 Ala Asp Ser Gly Asp Ile Val Phe Leu Gly Asn Thr Val Thr Ser Thr
 195 200 205
 Thr Pro Gly Thr Asn Arg Ser Ile Asp Leu Gly Thr Ser Ala Lys
 210 215 220
 Met Thr Ala Leu Arg Ser Ala Ala Gly Arg Ala Ile Tyr Phe Tyr Asp
 225 230 235 240
 Pro Ile Thr Thr Gly Ser Ser Thr Thr Val Thr Asp Val Leu Lys Val
 245 250 255
 Asn Glu Thr Pro Ala Asp Ser Ala Leu Gln Tyr Thr Gly Asn Ile Ile
 260 265 270
 Phe Thr Gly Glu Lys Leu Ser Glu Thr Glu Ala Ala Asp Ser Lys Asn
 275 280 285
 Leu Thr Ser Lys Leu Leu Gln Pro Val Thr Leu Ser Gly Gly Thr Leu
 290 295 300
 Ser Leu Lys His Gly Val Thr Leu Gln Thr Gln Ala Phe Thr Gln Gln
 305 310 315 320
 Ala Asp Ser Arg Leu Glu Met Asp Val Gly Thr Thr Leu Glu Pro Ala
 325 330 335
 Asp Thr Ser Thr Ile Asn Asn Leu Val Ile Asn Ile Ser Ser Ile Asp
 340 345 350
 Gly Ala Lys Lys Ala Lys Ile Glu Thr Lys Ala Thr Ser Lys Asn Leu
 355 360 365
 Thr Leu Ser Gly Thr Ile Thr Leu Leu Asp Pro Thr Gly Thr Phe Tyr
 370 375 380
 Glu Asn His Ser Leu Arg Asn Pro Gln Ser Tyr Asp Ile Leu Glu Leu
 385 390 395 400
 Lys Ala Ser Gly Thr Val Thr Ser Thr Ala Val Thr Pro Asp Pro Ile

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405 410 415
 Met Gly Glu Lys Phe His Tyr Gly Tyr Gln Gly Thr Trp Gly Pro Ile
 420 425 430
 Val Trp Gly Thr Gly Ala Ser Thr Thr Ala Thr Phe Asn Trp Thr Lys
 435 440 445
 Thr Gly Tyr Ile Pro Asn Pro Glu Arg Ile Gly Ser Leu Val Pro Asn
 450 455 460
 Ser Leu Trp Asn Ala Phe Ile Asp Ile Ser Ser Leu His Tyr Leu Met
 465 470 475 480
 Glu Thr Ala Asn Glu Gly Leu Gln Gly Asp Arg Ala Phe Trp Cys Ala
 485 490 495
 Gly Leu Ser Asn Phe Phe His Lys Asp Ser Thr Lys Thr Arg Arg Gly
 500 505 510
 Phe Arg His Leu Ser Gly Gly Tyr Val Ile Gly Gly Asn Leu His Thr
 515 520 525
 Cys Ser Asp Lys Ile Leu Ser Ala Ala Phe Cys Gln Leu Phe Gly Arg
 530 535 540
 Asp Arg Asp Tyr Phe Val Ala Lys Asn Gln Arg Tyr Ser Leu Arg Arg
 545 550 555 560
 Asn Ser Leu Leu Pro Ala Gln Arg Asn Leu Tyr Leu Ser Ser Leu Gln
 565 570 575
 Thr Thr Ala Leu Phe Val Val Leu Cys Ser Tyr Arg Asp Ser Cys Ser
 580 585 590
 Leu Phe Arg Lys Pro
 595

<210>30

<211>230

<212>PRT

<213>Chlamydia pneumoniae

<400>30

Leu Arg Ile Lys Gly Thr Val Tyr Gly Gly Thr Leu Tyr Tyr Gln His
 1 5 10 15
 Asn Glu Thr Tyr Ile Ser Leu Pro Cys Lys Leu Arg Pro Cys Ser Leu
 20 25 30
 Ser Tyr Val Pro Thr Glu Ile Pro Val Leu Phe Ser Gly Asn Leu Ser
 35 40 45
 Tyr Thr His Thr Asp Asn Asp Leu Lys Thr Lys Tyr Thr Thr Tyr Pro
 50 55 60
 Thr Val Lys Gly Ser Trp Gly Asn Asp Ser Phe Ala Leu Glu Phe Gly
 65 70 75 80
 Gly Arg Ala Pro Ile Cys Leu Asp Glu Ser Ala Leu Phe Glu Gln Tyr
 85 90 95
 Met Pro Phe Met Lys Leu Gln Phe Val Tyr Ala His Gln Glu Gly Phe
 100 105 110
 Lys Glu Gln Gly Thr Glu Ala Arg Glu Phe Gly Ser Ser Arg Leu Val
 115 120 125
 Asn Leu Ala Leu Pro Ile Gly Ile Arg Phe Asp Lys Glu Ser Asp Cys
 130 135 140
 Gln Asp Ala Thr Tyr Asn Leu Thr Leu Gly Tyr Thr Val Asp Leu Val
 145 150 155 160
 Arg Ser Asn Pro Asp Cys Thr Thr Thr Leu Arg Ile Ser Gly Asp Ser
 165 170 175
 Trp Lys Thr Phe Gly Thr Asn Leu Ala Arg Gln Ala Leu Val Leu Arg
 180 185 190
 Ala Gly Asn His Phe Cys Phe Asn Ser Asn Phe Glu Ala Phe Ser Gln
 195 200 205
 Phe Ser Phe Glu Leu Arg Gly Ser Ser Arg Asn Tyr Asn Val Asp Leu
 210 215 220
 Gly Ala Lys Tyr Gln Phe
 225 230

<210>31

<211>427

<212>PRT

<213>Chlamydia pneumoniae

<400>31

Met Arg Ser Ser Phe Ser Leu Leu Leu Ile Ser Ser Ser Leu Ala Phe
 1 5 10 15
 Pro Leu Leu Met Ser Val Ser Ala Asp Ala Ala Asp Leu Thr Leu Gly
 20 25 30
 Ser Arg Asp Ser Tyr Asn Gly Asp Thr Ser Thr Thr Glu Phe Thr Pro
 35 40 45
 Lys Ala Ala Thr Ser Asp Ala Ser Gly Thr Thr Tyr Ile Leu Asp Gly
 50 55 60
 Asp Val Ser Ile Ser Gln Ala Gly Lys Gln Thr Ser Leu Thr Thr Ser
 65 70 75 80
 Cys Phe Ser Asn Thr Ala Gly Asn Leu Thr Phe Leu Gly Asn Gly Phe
 85 90 95
 Ser Leu His Phe Asp Asn Ile Ile Ser Ser Thr Val Ala Gly Val Val
 100 105 110
 Val Ser Asn Thr Ala Ala Ser Gly Ile Thr Lys Phe Ser Gly Phe Ser
 115 120 125
 Thr Leu Arg Met Leu Ala Ala Pro Arg Thr Thr Gly Lys Gly Ala Ile
 130 135 140
 Lys Ile Thr Asp Gly Leu Val Phe Glu Ser Ile Gly Asn Leu Asp Leu
 145 150 155 160
 Asn Glu Asn Ala Ser Ser Glu Asn Gly Gly Ala Ile Asn Thr Lys Thr
 165 170 175
 Leu Ser Leu Thr Gly Ser Thr Arg Phe Val Ala Phe Leu Gly Asn Ser
 180 185 190
 Ser Ser Gln Gly Gly Ala Ile Tyr Ala Ser Gly Asp Ser Val Ile
 195 200 205
 Ser Glu Asn Ala Gly Ile Leu Ser Phe Gly Asn Asn Ser Ala Thr Thr
 210 215 220
 Ser Gly Gly Ala Ile Ser Ala Glu Gly Asn Leu Val Ile Ser Asn Asn
 225 230 235 240
 Gln Asn Ile Phe Phe Asp Gly Cys Lys Ala Thr Thr Asn Gly Gly Ala
 245 250 255
 Ile Asp Cys Asn Lys Ala Gly Ala Asn Pro Asp Pro Ile Leu Thr Leu
 260 265 270
 Ser Gly Asn Glu Ser Leu His Phe Leu Asn Asn Thr Ala Gly Asn Ser
 275 280 285
 Gly Gly Ala Ile Tyr Thr Lys Lys Leu Val Leu Ser Ser Gly Arg Gly
 290 295 300
 Gly Val Leu Phe Ser Asn Lys Ala Ala Asn Ala Thr Pro Lys Gly
 305 310 315 320
 Gly Ala Ile Ala Ile Leu Asp Ser Gly Glu Ile Ser Ile Ser Ala Asp
 325 330 335
 Leu Gly Asn Ile Ile Phe Glu Gly Asn Thr Thr Ser Thr Thr Gly Ser
 340 345 350
 Pro Ala Ser Val Thr Arg Asn Ala Ile Asp Leu Ala Ser Asn Ala Lys
 355 360 365
 Phe Leu Asn Leu Arg Ala Thr Arg Gly Asn Lys Val Ile Phe Tyr Asp
 370 375 380
 Pro Ile Thr Ser Ser Gly Ala Thr Asp Lys Leu Ser Leu Asn Lys Ala
 385 390 395 400
 Asp Ala Gly Ser Gly Asn Thr Tyr Glu Gly Tyr Ile Val Phe Ser Gly
 405 410 415
 Glu Lys Leu Ser Glu Val Arg Asn Leu Thr Ile
 420 425

<210>32

<211>507

<212>PRT

<213>Chlamydia pneumoniae

<400>32

Arg Leu His Arg Phe Leu Trp Arg Glu Thr Leu Arg Ser Lys Lys Pro
 1 5 10 15
 Asp Asn Leu Lys Ser Thr Phe Thr Gln Ala Val Glu Leu Ala Ala Gly
 20 25 30

Ala Leu Val Leu Lys Asp Gly Val Thr Val Val Ala Asn Thr Ile Thr
 35 40 45
 Gln Val Glu Gly Ser Lys Val Val Met Asp Gly Gly Thr Thr Phe Glu
 50 55 60
 Ala Ser Ala Glu Gly Val Thr Leu Asn Gly Leu Ala Ile Asn Ile Asp
 65 70 75 80
 Ser Leu Asp Gly Thr Asn Lys Ala Ile Ile Lys Ala Thr Ala Ala Ser
 85 90 95
 Lys Asp Val Ala Leu Ser Gly Pro Ile Met Leu Val Asp Ala Gln Gly
 100 105 110
 Asn Tyr Tyr Glu His His Asn Leu Ser Gln Gln Gln Val Phe Ala Leu
 115 120 125
 Ile Glu Leu Ser Ala Gln Gly Thr Met Thr Thr Thr Asp Ile Pro Asp
 130 135 140
 Thr Pro Ile Leu Asn Thr Thr Asn His Tyr Gly Ile Lys Gly Thr Gly
 145 150 155 160
 Ile Ile Val Trp Val Asp Asp Ala Thr Ala Lys Thr Lys Asn Ala Thr
 165 170 175
 Leu Thr Trp Thr Lys Thr Gly Tyr Lys Pro Asn Pro Glu Arg Gln Gly
 180 185 190
 Pro Leu Val Pro Asn Ser Leu Trp Gly Ser Phe Val Asp Val Arg Ser
 195 200 205
 Ile Gln Ser Leu Met Asp Arg Ser Thr Ser Ser Leu Ser Ser Ser Thr
 210 215 220
 Asn Leu Trp Val Ser Gly Ile Ala Asp Phe Leu His Glu Asp Gln Lys
 225 230 235 240
 Gly Asn Gln Arg Ser Tyr Arg His Ser Ser Ala Gly Tyr Ala Leu Gly
 245 250 255
 Gly Gly Phe Phe Thr Ala Ser Glu Asn Phe Phe Asn Phe Ala Phe Cys
 260 265 270
 Gln Leu Phe Gly Tyr Asp Lys Asp His Leu Val Ala Lys Asn His Thr
 275 280 285
 His Val Tyr Ala Gly Ala Met Ser Tyr Arg His Leu Gly Glu Ser Lys
 290 295 300
 Thr Leu Ala Lys Ile Leu Ser Gly Asn Ser Asp Ser Leu Pro Phe Val
 305 310 315 320
 Phe Asn Ala Arg Phe Ala Tyr Gly His Thr Asp Asn Asn Met Thr Thr
 325 330 335
 Lys Tyr Thr Gly Tyr Ser Pro Val Lys Gly Ser Trp Gly Asn Asp Ala
 340 345 350
 Phe Gly Ile Glu Cys Gly Gly Ala Ile Pro Val Val Ala Ser Gly Arg
 355 360 365
 Arg Ser Trp Val Asp Thr His Thr Pro Phe Leu Asn Leu Glu Met Ile
 370 375 380
 Tyr Ala His Gln Asn Asp Phe Lys Glu Asn Gly Thr Glu Gly Arg Ser
 385 390 395 400
 Phe Gln Ser Glu Asp Leu Phe Asn Leu Ala Val Pro Val Gly Ile Lys
 405 410 415
 Phe Glu Lys Phe Ser Asp Lys Ser Thr Tyr Asp Leu Ser Ile Ala Tyr
 420 425 430
 Val Pro Asp Val Ile Arg Asn Asp Pro Gly Cys Thr Thr Thr Leu Met
 435 440 445
 Val Ser Gly Asp Ser Trp Ser Thr Cys Gly Thr Ser Leu Ser Arg Gln
 450 455 460
 Ala Leu Leu Val Arg Ala Gly Asn His His Ala Phe Ala Ser Asn Phe
 465 470 475 480
 Glu Val Phe Ser Gln Phe Glu Val Glu Leu Arg Gly Ser Ser Arg Ser
 485 490 495
 Tyr Ala Ile Asp Leu Gly Gly Arg Phe Gly Phe
 500 505

<210>33
 <211>494
 <212>PRT
 <213>Chlamydia pneumoniae

WO 99/27105

PCT/IB98/01890

<400>33

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Met Lys Thr Ser Val Ser Met Leu Leu Ala Leu Leu Cys Ser Gly Ala
 1           5           10           15
Ser Ser Ile Val Leu His Ala Ala Thr Thr Pro Leu Asn Pro Glu Asp
          20           25           30
Gly Phe Ile Gly Glu Gly Asn Thr Asn Thr Phe Ser Pro Lys Ser Thr
          35           40           45
Thr Asp Ala Ala Gly Thr Thr Tyr Ser Leu Thr Gly Glu Val Leu Tyr
          50           55           60
Ile Asp Pro Gly Lys Gly Ser Ile Thr Gly Thr Cys Phe Val Glu
 65           70           75           80
Thr Ala Gly Asp Leu Thr Phe Leu Gly Asn Gly Asn Thr Leu Lys Phe
          85           90           95
Leu Ser Val Asp Ala Gly Ala Asn Ile Ala Val Ala His Val Gln Gly
          100          105          110
Ser Lys Asn Leu Ser Phe Thr Asp Phe Leu Ser Leu Val Ile Thr Glu
          115          120          125
Ser Pro Lys Ser Ala Val Thr Thr Gly Lys Gly Ser Leu Val Ser Leu
          130          135          140
Gly Ala Val Gln Leu Gln Asp Ile Asn Thr Leu Val Leu Thr Ser Asn
145          150          155          160
Ala Ser Val Glu Asp Gly Gly Val Ile Lys Gly Asn Ser Cys Leu Ile
          165          170          175
Gln Gly Ile Lys Asn Ser Ala Ile Phe Gly Gln Asn Thr Ser Ser Lys
          180          185          190
Lys Gly Gly Ala Ile Ser Thr Thr Gln Gly Leu Thr Ile Glu Asn Asn
          195          200          205
Leu Gly Thr Leu Lys Phe Asn Glu Asn Lys Ala Val Thr Ser Gly Gly
          210          215          220
Ala Leu Asp Leu Gly Ala Ala Ser Thr Phe Thr Ala Asn His Glu Leu
225          230          235          240
Ile Phe Ser Gln Asn Lys Thr Ser Gly Asn Ala Ala Asn Gly Gly Ala
          245          250          255
Ile Asn Cys Ser Gly Asp Leu Thr Phe Thr Asp Asn Thr Ser Leu Leu
          260          265          270
Leu Gln Glu Asn Ser Thr Met Gln Asp Gly Gly Ala Leu Cys Ser Thr
          275          280          285
Gly Thr Ile Ser Ile Thr Gly Ser Asp Ser Ile Asn Val Ile Gly Asn
          290          295          300
Thr Ser Gly Gln Lys Gly Ala Ile Ser Ala Ala Ser Leu Lys Ile
305          310          315          320
Leu Gly Gly Gln Gly Gly Ala Leu Phe Ser Asn Asn Val Val Thr His
          325          330          335
Ala Thr Pro Leu Gly Gly Ala Ile Phe Ile Asn Thr Gly Gly Ser Leu
          340          345          350
Gln Leu Phe Thr Gln Gly Gly Asp Ile Val Phe Glu Gly Asn Gln Val
          355          360          365
Thr Thr Thr Ala Pro Asn Ala Thr Thr Lys Arg Asn Val Ile His Leu
          370          375          380
Glu Ser Thr Ala Lys Trp Thr Gly Leu Ala Ala Ser Gln Gly Asn Ala
385          390          395          400
Ile Tyr Phe Tyr Asp Pro Ile Thr Thr Asn Asp Thr Gly Ala Ser Asp
          405          410          415
Asn Leu Arg Ile Asn Glu Val Ser Ala Asn Gln Lys Leu Ser Gly Ser
          420          425          430
Ile Val Phe Ser Gly Glu Arg Leu Ser Thr Ala Glu Ala Ile Ala Glu
          435          440          445
Asn Leu Thr Ser Arg Ile Asn Gln Pro Val Thr Leu Val Glu Gly Ser
          450          455          460
Leu Val Leu Lys Gln Gly Val Thr Leu Ile Thr Gln Gly Phe Ser Gln
465          470          475          480
Glu Pro Glu Ser Thr Leu Leu Leu Asp Leu Gly Thr Ser Leu
          485          490

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<210>34

<211>86

<212>PRT

<213>Chlamydia pneumoniae

<400>34

Met Val Ser Ala Phe Ile Asp Lys Phe Val Met Thr Ile Ser Ser Val
 1 5 10 15
 Glu Ala Tyr Asn Glu Val Pro Arg Ser Lys Arg Ser Val Asp Ser Gly
 20 25 30
 Ser Cys Glu Asn Pro Cys Val Ile Lys Val Thr Pro Cys Leu Ser Thr
 35 40 45
 Lys Leu Pro Ser Thr Lys Val Thr Gly Trp Leu Ile Leu Glu Val Arg
 50 55 60
 Phe Ser Ala Ile Ala Ser Ala Val Asp Asn Leu Ser Pro Glu Asn Thr
 65 70 75 80
 Ile Asp Pro Glu Ser Phe
 85

<210>35

<211>450

<212>PRT

<213>Chlamydia pneumoniae

<400>35

Ala Ser Thr Glu Asp Ile Val Ile Thr Asn Leu Ser Ile Asn Ala Asp
 1 5 10 15
 Thr Ile Tyr Gly Lys Asn Pro Ile Asn Ile Val Ala Ser Ala Ala Asn
 20 25 30
 Lys Asn Ile Thr Leu Thr Gly Thr Leu Ala Leu Val Asn Ala Asp Gly
 35 40 45
 Ala Phe Tyr Glu Asn His Thr Leu Gln Asp Ser Gln Asp Tyr Ser Phe
 50 55 60
 Val Lys Leu Ser Pro Gly Ala Gly Gly Thr Ile Ile Thr Gln Asp Ala
 65 70 75 80
 Ser Gln Lys Pro Leu Glu Val Ala Pro Ser Arg Pro His Tyr Gly Tyr
 85 90 95
 Gln Gly His Trp Asn Val Gln Val Ile Pro Gly Thr Gly Thr Gln Pro
 100 105 110
 Ser Gln Ala Asn Leu Glu Trp Val Arg Thr Gly Tyr Leu Pro Asn Pro
 115 120 125
 Glu Arg Gln Gly Ser Leu Val Pro Asn Ser Leu Trp Gly Ser Phe Val
 130 135 140
 Asp Gln Arg Ala Ile Gln Glu Ile Met Val Asn Ser Ser Gln Ile Leu
 145 150 155 160
 Cys Gln Glu Arg Gly Val Trp Gly Ala Gly Ile Ala Asn Phe Leu His
 165 170 175
 Arg Asp Lys Ile Asn Glu His Arg Tyr Arg His Ser Gly Val Gly Tyr
 180 185 190
 Leu Val Gly Val Gly Thr His Ala Phe Ser Asp Ala Thr Ile Asn Ala
 195 200 205
 Ala Phe Cys Gln Leu Phe Ser Arg Asp Lys Asp Tyr Val Val Ser Lys
 210 215 220
 Asn His Gly Thr Ser Tyr Ser Gly Val Val Phe Leu Glu Asp Thr Leu
 225 230 235 240
 Glu Phe Arg Ser Pro Gln Gly Phe Tyr Thr Asp Ser Ser Ser Glu Ala
 245 250 255
 Cys Cys Asn Gln Val Val Thr Ile Asp Met Gln Leu Ser Tyr Ser His
 260 265 270
 Arg Asn Asn Asp Met Lys Thr Lys Tyr Thr Thr Tyr Pro Glu Ala Gln
 275 280 285
 Gly Ser Trp Ala Asn Asp Val Phe Gly Leu Glu Phe Gly Ala Thr Thr
 290 295 300
 Tyr Tyr Tyr Pro Asn Ser Thr Phe Leu Phe Asp Tyr Tyr Ser Pro Phe
 305 310 315 320
 Leu Arg Leu Gln Cys Thr Tyr Ala His Gln Glu Asp Phe Lys Glu Thr
 325 330 335
 Gly Gly Glu Val Arg His Phe Thr Ser Gly Asp Leu Phe Asn Leu Ala

340 345 350
 Val Pro Ile Gly Val Lys Phe Glu Arg Phe Ser Asp Cys Lys Arg Gly
 355 360 365
 Ser Tyr Glu Leu Thr Phe Ala Tyr Val Pro Asp Val Ile Arg Lys Asp
 370 375 380
 Pro Lys Ser Thr Ala Thr Leu Ala Ser Gly Ala Thr Trp Ser Thr His
 385 390 395 400
 Gly Asn Asn Leu Ser Arg Gln Gly Leu Gln Leu Arg Leu Gly Asn His
 405 410 415
 Cys Leu Ile Asn Pro Gly Ile Glu Val Phe Ser His Gly Ala Ile Glu
 420 425 430
 Leu Arg Gly Ser Ser Arg Asn Tyr Asn Ile Asn Leu Gly Gly Lys Tyr
 435 440 445
 Arg Phe
 450
 <210>36
 <211>661
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>36
 Lys Leu Trp Ser Asn Pro Asn Leu Arg Leu Met Lys Arg Cys Phe Leu
 1 5 10 15
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 20 25 30
 His Gln Glu Ala Val Lys Lys Lys Asn Ser Tyr Leu Ser His Phe Lys
 35 40 45
 Ser Val Ser Gly Ile Val Thr Ile Glu Asp Gly Val Leu Asn Ile His
 50 55 60
 Asn Asn Leu Arg Ile Gln Ala Asn Lys Val Tyr Val Glu Asn Thr Val
 65 70 75 80
 Gly Gln Ser Leu Lys Leu Val Ala His Gly Asn Val Met Val Asn Tyr
 85 90 95
 Arg Ala Lys Thr Leu Val Cys Asp Tyr Leu Glu Tyr Tyr Glu Asp Thr
 100 105 110
 Asp Ser Cys Leu Leu Thr Asn Gly Arg Phe Ala Met Tyr Pro Trp Phe
 115 120 125
 Leu Gly Gly Ser Met Ile Thr Leu Thr Pro Glu Thr Ile Val Ile Arg
 130 135 140
 Lys Gly Tyr Ile Ser Thr Ser Glu Gly Pro Lys Lys Asp Leu Cys Leu
 145 150 155 160
 Ser Gly Asp Tyr Leu Glu Tyr Ser Ser Asp Ser Leu Leu Ser Ile Gly
 165 170 175
 Lys Thr Thr Leu Arg Val Cys Arg Ile Pro Ile Leu Phe Leu Pro Pro
 180 185 190
 Phe Ser Ile Met Pro Met Glu Ile Pro Lys Pro Pro Ile Asn Phe Arg
 195 200 205
 Gly Gly Thr Gly Gly Phe Leu Gly Ser Tyr Leu Gly Met Ser Tyr Ser
 210 215 220
 Pro Ile Ser Arg Lys His Phe Ser Ser Thr Phe Phe Leu Asp Ser Phe
 225 230 235 240
 Phe Lys His Gly Val Gly Met Gly Phe Asn Leu His Cys Ser Gln Lys
 245 250 255
 Gln Val Pro Glu Asn Val Phe Asn Met Lys Ser Tyr Tyr Ala His Arg
 260 265 270
 Leu Ala Ile Asp Met Ala Glu Ala His Asp Arg Tyr Arg Leu His Gly
 275 280 285
 Asp Phe Cys Phe Thr His Lys His Val Asn Phe Ser Gly Glu Tyr His
 290 295 300
 Leu Ser Asp Ser Trp Glu Thr Val Ala Asp Ile Phe Pro Asn Asn Phe
 305 310 315 320
 Met Leu Lys Asn Thr Gly Pro Thr Arg Val Asp Cys Thr Trp Asn Asp
 325 330 335
 Asn Tyr Phe Glu Gly Tyr Leu Thr Ser Ser Val Lys Val Asn Ser Phe
 340 345 350

Gln Asn Ala Asn Gln Glu Leu Pro Tyr Leu Thr Leu Arg Gln Tyr Pro
 355 360 365
 Ile Ser Ile Tyr Asn Thr Gly Val Tyr Leu Glu Asn Ile Val Glu Cys
 370 375 380
 Gly Tyr Leu Asn Phe Ala Phe Ser Asp His Ile Val Gly Glu Asn Phe
 385 390 395 400
 Ser Ser Leu Arg Leu Ala Ala Arg Pro Lys Leu His Lys Thr Val Pro
 405 410 415
 Leu Pro Ile Gly Thr Leu Ser Ser Thr Leu Gly Ser Ser Leu Ile Tyr
 420 425 430
 Tyr Ser Asp Val Pro Glu Ile Ser Ser Arg His Ser Gln Leu Ser Ala
 435 440 445
 Lys Leu Gln Leu Asp Tyr Arg Phe Leu Leu His Lys Ser Tyr Ile Gln
 450 455 460
 Arg Arg His Ile Ile Glu Pro Phe Val Thr Phe Ile Thr Glu Thr Arg
 465 470 475 480
 Pro Leu Ala Lys Asn Glu Asp His Tyr Ile Phe Ser Ile Gln Asp Ala
 485 490 495
 Phe His Ser Leu Asn Leu Leu Lys Ala Gly Ile Asp Thr Ser Val Leu
 500 505 510
 Ser Lys Thr Asn Pro Arg Phe Pro Arg Ile His Ala Lys Leu Trp Thr
 515 520 525
 Thr His Ile Leu Ser Asn Thr Glu Ser Lys Pro Thr Phe Pro Lys Thr
 530 535 540
 Ala Cys Glu Leu Ser Leu Pro Phe Gly Lys Lys Asn Thr Val Ser Leu
 545 550 555 560
 Asp Ala Glu Trp Ile Trp Lys Lys His Cys Trp Asp His Met Asn Ile
 565 570 575
 Arg Trp Glu Trp Ile Gly Asn Asp Asn Val Ala Met Thr Leu Glu Ser
 580 585 590
 Leu His Arg Ser Lys Tyr Ser Leu Ile Lys Cys Asp Arg Glu Asn Phe
 595 600 605
 Ile Leu Asp Val Ser Arg Pro Ile Asp Gln Leu Leu Asp Ser Pro Leu
 610 615 620
 Ser Asp His Arg Asn Leu Ile Leu Gly Lys Leu Phe Val Arg Pro His
 625 630 635 640
 Pro Cys Trp Asn Tyr Arg Leu Ser Leu Arg Tyr Gly Trp His Arg Arg
 645 650 655
 Thr Leu Arg Thr Thr
 660

<210>37

<211>245

<212>PRT

<213>Chlamydia pneumoniae

<400>37

Glu Gln Arg Ser Lys Leu Asn Val Ala Leu Ala Leu Leu Glu Leu Gly
 1 5 10 15
 Cys Asp Thr Pro Lys Leu Leu Glu Tyr Ile Thr Glu Arg Leu Val Gln
 20 25 30
 Pro His Tyr Asn Glu Thr Leu Ala Leu Ser Phe Ser Lys Gly Arg Thr
 35 40 45
 Leu Gln Asn Trp Lys Arg Val Asn Ile Ile Val Pro Gln Asp Pro Gln
 50 55 60
 Glu Arg Glu Arg Leu Leu Ser Thr Thr Arg Gly Leu Glu Glu Gln Ile
 65 70 75 80
 Leu Thr Phe Leu Phe Arg Leu Pro Lys Glu Ala Tyr Leu Pro Cys Ile
 85 90 95
 Tyr Lys Leu Leu Ala Ser Gln Lys Thr Gln Leu Ala Thr Thr Ala Ile
 100 105 110
 Ser Phe Leu Ser His Thr Ser His Gln Glu Ala Leu Asp Leu Leu Phe
 115 120 125
 Gln Ala Ala Lys Leu Pro Gly Glu Pro Ile Ile Arg Ala Tyr Ala Asp
 130 135 140
 Leu Ala Ile Tyr Asn Leu Thr Lys Asp Pro Glu Lys Lys Arg Ser Leu

145 150 155 160
 His Asp Tyr Ala Lys Lys Leu Ile Gln Glu Thr Leu Leu Phe Val Asp
 165 170 175
 Thr Glu Asn Gln Arg Pro His Pro Ser Met Pro Tyr Leu Arg Tyr Gln
 180 185 190
 Val Thr Pro Glu Ser Arg Thr Lys Leu Met Leu Asp Ile Leu Glu Thr
 195 200 205
 Leu Ala Thr Ser Lys Ser Ser Glu Asp Ile Arg Leu Leu Ile Gln Leu
 210 215 220
 Met Thr Glu Gly Asp Ala Lys Asn Phe Pro Val Leu Ala Gly Leu Leu
 225 230 235 240
 Ile Lys Ile Val Glu
 245
 <210>38
 <211>348
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>38
 Cys Ser Arg Ser Pro Tyr Pro Asn Ile Glu Ile Leu Ala Arg Gly Val
 1 5 10 15
 Glu His Arg Ser Met Gly Leu Phe His Leu Thr Leu Phe Gly Leu Leu
 20 25 30
 Leu Cys Ser Leu Pro Ile Ser Leu Val Ala Lys Phe Pro Glu Ser Val
 35 40 45
 Gly His Lys Ile Leu Tyr Ile Ser Thr Gln Ser Thr Gln Gln Ala Leu
 50 55 60
 Ala Thr Tyr Leu Glu Ala Leu Asp Ala Tyr Gly Asp His Asp Phe Phe
 65 70 75 80
 Val Leu Arg Lys Ile Gly Glu Asp Tyr Leu Lys Gln Ser Ile His Ser
 85 90 95
 Ser Asp Pro Gln Thr Arg Lys Ser Thr Ile Ile Gly Ala Gly Leu Ala
 100 105 110
 Gly Ser Ser Glu Ala Leu Asp Val Leu Ser Gln Ala Met Glu Thr Ala
 115 120 125
 Asp Pro Leu Gln Gln Leu Leu Val Leu Ser Ala Val Ser Gly His Leu
 130 135 140
 Gly Lys Thr Ser Asp Asp Leu Leu Phe Lys Ala Leu Ala Ser Pro Tyr
 145 150 155 160
 Pro Val Ile Arg Leu Glu Ala Ala Tyr Arg Leu Ala Asn Leu Lys Asn
 165 170 175
 Thr Lys Val Ile Asp His Leu His Ser Phe Ile His Lys Leu Pro Glu
 180 185 190
 Glu Ile Gln Cys Leu Ser Ala Ala Ile Phe Leu Arg Leu Glu Thr Glu
 195 200 205
 Glu Ser Asp Ala Tyr Ile Arg Asp Leu Leu Ala Ala Lys Lys Ser Ala
 210 215 220
 Ile Arg Ser Ala Thr Ala Leu Gln Ile Gly Glu Tyr Gln Gln Lys Arg
 225 230 235 240
 Phe Leu Pro Thr Leu Arg Asn Leu Leu Thr Ser Ala Ser Pro Gln Asp
 245 250 255
 Gln Glu Ala Ile Leu Tyr Ala Leu Gly Lys Leu Lys Asp Gly Gln Ser
 260 265 270
 Tyr Tyr Asn Ile Lys Lys Gln Leu Gln Lys Pro Asp Val Asp Val Thr
 275 280 285
 Leu Ala Ala Ala Gln Ala Leu Ile Ala Leu Gly Lys Glu Glu Asp Ala
 290 295 300
 Leu Pro Val Ile Lys Lys Gln Ala Leu Glu Glu Arg Pro Arg Ala Leu
 305 310 315 320
 Tyr Ala Leu Arg His Leu Pro Ser Glu Ile Gly Ile Pro Ile Ala Leu
 325 330 335
 Pro Ile Phe Leu Lys Thr Lys Asn Ser Glu Ala Ser
 340 345
 <210>39
 <211>196

WO 99/27105

PCT/IB98/01890

<212>PRT

<213>Chlamydia pneumoniae

<400>39

Met Ser Leu Pro Leu Val Leu Gly Ser Ser Ser Pro Arg Arg Lys Phe
 1 5 10 15
 Ile Leu Glu Lys Phe Arg Val Pro Phe Thr Val Ile Pro Ser Asn Phe
 20 25 30
 Asp Glu Ser Lys Val Ser Tyr Ser Gly Asp Pro Ile Ala Tyr Thr Gln
 35 40 45
 Glu Leu Ala Ala Gln Lys Ala Tyr Ala Val Ser Glu Leu His Ser Pro
 50 55 60
 Cys Asp Cys Ile Ile Leu Thr Gly Asp Thr Ile Val Ser Tyr Asp Gly
 65 70 75 80
 Arg Ile Phe Thr Lys Pro Gln Xaa Lys Ala Xaa Ala Ile Gln Met Leu
 85 90 95
 Lys Thr Leu Arg Asn Gln Thr His Asp Val Val Thr Ser Ile Ala Val
 100 105 110
 Leu His Lys Gly Lys Leu Leu Thr Gly Ser Glu Thr Ser Gln Ile Ser
 115 120 125
 Leu Thr Met Ile Pro Asp His Arg Ile Glu Ser Tyr Ile Asp Thr Val
 130 135 140
 Gly Thr Leu Asn Asn Cys Gly Ala Tyr Asp Val Cys His Gly Gly Leu
 145 150 155 160
 Ile Leu Lys Lys Val His Gly Cys Val Tyr Asn Val Gln Gly Leu Pro
 165 170 175
 Ile Gln Thr Leu Lys Tyr Leu Leu Glu Leu Asn Ile Asp Leu Trp
 180 185 190
 Asp Tyr Ser Ile
 195

<210>40

<211>127

<212>PRT

<213>Chlamydia pneumoniae

<400>40

Val Xaa Arg Asn Arg Lys Thr Gly Ile Asn Asp Gln Glu Ile Arg Ser
 1 5 10 15
 Val Leu Gly Lys Met Leu Phe Gly Gly Asp Asp Ala Phe Lys Gln Ile
 20 25 30
 Gln Ala Leu Ser Gly Gly Glu Thr Ala Arg Leu Leu Met Ala Gly Met
 35 40 45
 Met Leu Glu Asn His Asn Val Leu Ile Leu Asp Glu Ala Asn Asn His
 50 55 60
 Leu Asp Leu Glu Ser Val Ser Ala Leu Ser Trp Ala Ile Asn Asp Tyr
 65 70 75 80
 Lys Gly Thr Ala Ile Phe Val Ser His Asp Arg Gly Leu Ile Gln Asp
 85 90 95
 Cys Ala Thr Lys Leu Leu Ile Phe Asp Lys Asp Lys Ile Thr Phe Phe
 100 105 110
 Asp Gly Thr Met Val Asp Tyr Thr Ala Gly His Lys Gln Leu Leu
 115 120 125

<210>41

<211>432

<212>PRT

<213>Chlamydia pneumoniae

<400>41

Leu Tyr Ser Lys Gln His Phe Val Met Leu Ser Ala Met Ser Ile Val
 1 5 10 15
 Leu Asp Lys Ile Gly Lys Ser Leu Gly Thr Arg Ile Leu Phe Asp Asp
 20 25 30
 Val Ser Val Val Phe Asn Pro Gly Asn Cys Tyr Gly Leu Thr Gly Pro
 35 40 45
 Asn Gly Ala Gly Lys Ser Thr Leu Leu Lys Ile Ile Met Gly Met Ile
 50 55 60
 Glu Pro Thr Arg Gly Ser Ile Ser Leu Pro Lys Lys Val Gly Ile Leu

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65          70          75          80
Arg Gln Asn Ile Asp Ser Phe His Asp Thr Val Leu Asp Cys Val
      85          90          95
Ile Met Gly Asn Thr Arg Leu Trp Glu Ala Leu Gln Arg Arg Asp Asn
      100         105         110
Leu Tyr Leu Gln Glu Phe Thr Asp Ala Ile Gly Met Glu Leu Gly Glu
      115         120         125
Ile Glu Glu Ile Ile Gly Glu Glu Asn Gly Tyr Arg Ala Asp Ser Glu
      130         135         140
Ala Glu Glu Leu Leu Thr Gly Ile Gly Ile Pro Asn Glu Met Phe Asp
      145         150         155         160
Lys Lys Met Ala Met Ile Pro Ile Asp Leu Gln Phe Arg Val Leu Leu
      165         170         175
Cys Gln Ala Leu Phe Gly His Pro Glu Ala Leu Leu Leu Asp Glu Pro
      180         185         190
Thr Asn His Leu Asp Leu Tyr Ser Ile Asn Trp Leu Gly Asn Phe Leu
      195         200         205
Lys Asp Tyr Glu Gly Thr Val Ile Val Val Ser His Asp Arg His Phe
      210         215         220
Leu Asn Thr Ile Thr Thr His Ile Ala Asp Ile Asp Tyr Asp Thr Ile
      225         230         235         240
Ile Ile Tyr Pro Gly Asn Tyr Asp Asp Met Val Glu Met Lys Thr Ala
      245         250         255
Ser Arg Glu Gln Glu Lys Ala Asp Ile Lys Ser Lys Glu Lys Lys Ile
      260         265         270
Ser Gln Leu Lys Glu Phe Val Ala Lys Phe Gly Ala Gly Ser Arg Ala
      275         280         285
Ser Gln Val Gln Ser Arg Leu Arg Glu Ile Lys Lys Leu Gln Pro Gln
      290         295         300
Glu Leu Lys Lys Ser Asn Ile Gln Arg Pro Tyr Ile Arg Phe Pro Leu
      305         310         315         320
Ser Asp Lys Ser Ser Gly Lys Val Val Leu Ser Leu Glu Ala Ile Thr
      325         330         335
Lys Asp Tyr Gly Asp His Gln Val Ile His Pro Phe Ser Leu Glu Ile
      340         345         350
Tyr Gln Gly Asp Lys Leu Gly Ile Ile Gly Asn Asn Gly Leu Gly Lys
      355         360         365
Thr Thr Leu Met Lys Leu Leu Ala Gly Val Glu Ala Pro Ser Ser Gly
      370         375         380
Ser Ile Lys Leu Gly His Gln Ala Ile Cys Ser Tyr Phe Pro Gln Asn
      385         390         395         400
His Ser Asp Val Leu Ala Asp Cys Gly Gln Glu Thr Leu Phe Glu Xaa
      405         410         415
Tyr Ala Ile Ala Lys Pro Glu Leu Thr Ile Lys Lys Ser Ala Val Cys
      420         425         430

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<210>42

<211>131

<212>PRT

<213>Chlamydia pneumoniae

<400>42

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Arg Glu Val Met Ile Ala Ser Ile Tyr Ser Phe Leu Asp Tyr Leu Lys
1          5          10          15
Met Val Lys Ser Ala Ser Pro His Thr Leu Arg Asn Tyr Cys Leu Asp
      20          25          30
Leu Asn Gly Leu Lys Ile Phe Leu Xaa Glu Arg Gly Asn Leu Ala Pro
      35          40          45
Ser Ser Pro Leu Gln Leu Ala Thr Glu Lys Arg Lys Val Ser Glu Leu
      50          55          60
Pro Phe Ser Leu Phe Thr Lys Glu His Val Arg Met Tyr Ile Ala Lys
      65          70          75          80
Leu Ile Glu Asn Gly Lys Ala Lys Arg Thr Ile Lys Arg Cys Leu Ser
      85          90          95
Ser Ile Lys Ser Phe Ala His Tyr Cys Val Ile Gln Lys Ile Leu Leu
      100         105         110

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Glu Asn Leu Arg Lys Leu Ser Thr Asp Leu Val Phe Leu Arg Ser Cys
 115 120 125
 Leu Pro Arg
 130
 <210>43
 <211>307
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>43
 Met Ser Ser Arg Glu Leu Ile Ile Leu Gly Cys Ser Ser Gln Gln Pro
 1 5 10 15
 Thr Arg Thr Arg Asn Gln Gly Ala Tyr Leu Phe Arg Trp Asn Gly Glu
 20 25 30
 Gly Leu Leu Phe Asp Pro Gly Glu Gly Thr Gln Arg Gln Phe Ile Phe
 35 40 45
 Ala Asn Ile Ala Pro Thr Thr Val Asn Arg Ile Phe Val Ser His Phe
 50 55 60
 His Gly Asp His Cys Leu Gly Leu Gly Ser Met Leu Met Arg Leu Asn
 65 70 75 80
 Leu Asp Lys Val Ser His Pro Ile His Cys Tyr Tyr Pro Ala Ser Gly
 85 90 95
 Lys Lys Tyr Phe Asp Arg Leu Arg Tyr Gly Thr Ile Tyr His Glu Thr
 100 105 110
 Ile Gln Val Val Glu His Pro Ile Ser Glu Glu Gly Ile Val Glu Asp
 115 120 125
 Phe Gly Ser Phe Arg Ile Glu Ala Gln Arg Leu Gln His Gln Val Asp
 130 135 140
 Thr Leu Gly Trp Arg Ile Thr Glu Pro Asp Thr Ile Lys Phe Leu Pro
 145 150 155 160
 Lys Glu Leu Glu Ser Arg Gly Ile Arg Gly Leu Ile Ile Gln Asp Leu
 165 170 175
 Ile Arg Asp Gln Glu Ile Ser Ile Gly Gly Ser Thr Val Tyr Leu Ser
 180 185 190
 Asp Val Ser Tyr Val Arg Lys Gly Asp Ser Ile Ala Ile Ile Ala Asp
 195 200 205
 Thr Leu Pro Cys Gln Ala Ala Ile Asp Leu Ala Lys Asn Ser Cys Met
 210 215 220
 Met Leu Cys Glu Ser Thr Tyr Leu Glu Gln His Arg His Leu Ala Glu
 225 230 235 240
 Ser His Phe His Met Thr Ala Lys Gln Ala Ala Thr Leu Ala Lys Arg
 245 250 255
 Ala Ala Thr Gln Lys Leu Ile Leu Thr His Phe Ser Ala Arg Tyr Leu
 260 265 270
 Asn Leu Asp Asp Phe Tyr Lys Glu Ala Ser Ala Val Phe Pro Asn Val
 275 280 285
 Ser Val Ala Gln Glu Tyr Arg Ser Tyr Pro Phe Pro Lys Asn Pro Leu
 290 295 300
 Leu Asn Lys
 305
 <210>44
 <211>440
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>44
 Ala Phe Gln Arg Ile Lys Arg Lys Tyr His Leu Ser Cys Arg Pro Ser
 1 5 10 15
 Arg Ser Trp Glu Asn Lys His Arg Ala His Ile Ala Lys Val Leu His
 20 25 30
 Arg Lys Phe Phe Arg Phe Ser Val Gly Gly Met Arg Asp Glu Ala Glu
 35 40 45
 Ile Lys Gly His Arg Arg Thr Tyr Ile Gly Ala Met Pro Gly Lys Met
 50 55 60
 Val Gln Ala Leu Lys Gln Ser Gln Ala Met Asn Pro Val Ile Met Ile
 65 70 75 80

Asp Glu Val Asp Lys Ile Gly Ala Ser Tyr His Gly Asp Pro Ala Ser
 85 90 95
 Ala Leu Leu Glu Val Leu Asp Pro Glu Gln Asn Lys Asp Phe Leu Asp
 100 105 110
 His Tyr Leu Asp Val Arg Val Asp Leu Ser Asn Val Leu Phe Ile Leu
 115 120 125
 Thr Ala Asn Val Leu Asp Thr Ile Pro Asp Pro Leu Leu Asp Arg Met
 130 135 140
 Glu Ile Leu Arg Leu Ser Gly Tyr Ile Leu Glu Glu Lys Leu Gln Ile
 145 150 155 160
 Ala Lys Lys Tyr Leu Val Pro Lys Ala Arg Lys Glu Ile Gly Leu Thr
 165 170 175
 Ala Ser Glu Val Asn Phe Gln Pro Glu Ala Leu Lys Tyr Met Ile Asn
 180 185 190
 Asn Tyr Ala Arg Glu Ala Gly Val Arg Thr Leu Asn Gly Asn Ile Lys
 195 200 205
 Lys Val Leu Arg Lys Val Ala Leu Lys Ile Val Gln Asn Gln Glu Lys
 210 215 220
 Pro Lys Ser Lys Lys Ile Thr Phe Lys Ile Ser Ser Lys Asn Leu Gln
 225 230 235 240
 Thr Tyr Leu Gly Lys Pro Ile Phe Ser Ser Asp Arg Phe Tyr Glu Ser
 245 250 255
 Thr Pro Val Gly Val Ala Thr Gly Leu Ala Trp Thr Ser Leu Gly Gly
 260 265 270
 Ala Thr Leu Tyr Ile Glu Ser Val Gln Val Ser Ser Leu Lys Thr Asp
 275 280 285
 Met His Leu Thr Gly Gln Ala Gly Glu Val Met Lys Glu Ser Ser Gln
 290 295 300
 Ile Ala Trp Thr Tyr Leu His Ser Ala Leu His Arg Tyr Ala Pro Gly
 305 310 315 320
 Tyr Thr Phe Phe Pro Lys Ser Gln Val His Ile His Ile Pro Glu Gly
 325 330 335
 Ala Thr Pro Lys Asp Gly Pro Ser Ala Gly Ile Thr Met Val Thr Ser
 340 345 350
 Leu Leu Ser Leu Leu Leu Glu Thr Pro Val Val Asn Asn Leu Gly Met
 355 360 365
 Thr Gly Glu Ile Thr Leu Thr Gly Arg Val Leu Gly Val Gly Gly Ile
 370 375 380
 Arg Glu Lys Leu Ile Ala Ala Arg Arg Ser Arg Leu Asn Ile Leu Ile
 385 390 395 400
 Phe Pro Glu Asp Asn Arg Arg Asp Tyr Glu Glu Leu Pro Ala Tyr Leu
 405 410 415
 Lys Thr Gly Leu Lys Ile His Phe Val Ser His Tyr Asp Asp Val Leu
 420 425 430
 Lys Val Ala Phe Pro Lys Leu Lys
 435 440

<210>45

<211>424

<212>PRT

<213>Chlamydia pneumoniae

<400>45

Pro Ser Ile Arg Thr Ile Val Asp Ser Thr Thr Asn Ser Asp Ser Pro
 1 5 10 15
 Ile Leu Asp Pro Asn Pro Glu Asp Val Glu Lys Leu Leu Asp Glu Ser
 20 25 30
 Glu Glu Glu Ser Glu Asp Gln Ser Thr Glu Arg Leu Leu Pro Ser Glu
 35 40 45
 Leu Phe Ile Leu Pro Leu Asn Lys Arg Pro Phe Phe Pro Gly Met Ala
 50 55 60
 Ala Pro Ile Leu Ile Glu Ser Gly Pro Tyr Tyr Glu Val Leu Lys Val
 65 70 75 80
 Leu Ala Lys Ser Ser Gln Lys Tyr Ile Gly Leu Val Leu Thr Lys Lys
 85 90 95
 Glu Asn Ala Asp Ile Leu Lys Val Ser Phe Asn Gln Leu His Lys Thr

100 105 110
 Gly Val Ala Ala Arg Ile Leu Arg Ile Met Pro Ile Glu Gly Gly Ser
 115 120 125
 Ala Gln Val Leu Leu Ser Ile Glu Glu Arg Ile Arg Ile Ile Glu Pro
 130 135 140
 Ile Lys Asp Lys Tyr Leu Lys Ala Arg Val Ser Tyr His Ala Asp Asn
 145 150 155 160
 Lys Glu Leu Thr Glu Glu Leu Lys Ala Tyr Ser Ile Ser Ile Val Ser
 165 170 175
 Val Ile Lys Asp Leu Leu Lys Leu Asn Pro Leu Phe Lys Glu Glu Leu
 180 185 190
 Gln Ile Phe Leu Gly His Ser Asp Phe Thr Glu Pro Gly Lys Leu Ala
 195 200 205
 Asp Phe Ser Val Ala Leu Thr Thr Ala Thr Arg Glu Glu Leu Gln Glu
 210 215 220
 Val Leu Glu Thr Thr Asn Met His Asp Arg Ile Asp Lys Ala Leu Ile
 225 230 235 240
 Leu Leu Lys Lys Glu Leu Asp Leu Ser Arg Leu Gln Ser Ser Ile Asn
 245 250 255
 Gln Lys Ile Glu Ala Thr Ile Thr Lys Ser Gln Lys Glu Phe Phe Leu
 260 265 270
 Lys Glu Gln Leu Lys Thr Xaa Lys Lys Glu Leu Gly Leu Glu Lys Glu
 275 280 285
 Asp Arg Ala Ile Asp Ile Glu Lys Phe Ser Glu Arg Leu Arg Lys Arg
 290 295 300
 His Val Pro Asp Tyr Ala Met Glu Val Ile Gln Asp Glu Ile Glu Lys
 305 310 315 320
 Leu Gln Thr Leu Glu Thr Ser Ser Ala Glu Tyr Thr Val Cys Arg Asn
 325 330 335
 Tyr Leu Asp Trp Leu Thr Ile Ile Pro Trp Gly Ile Gln Ser Lys Glu
 340 345 350
 Tyr His Asp Leu Lys Lys Ala Glu Ile Val Leu Asn Lys Asp His Tyr
 355 360 365
 Gly Leu Asp Glu Ile Lys Gln Arg Ile Leu Glu Leu Ile Ser Val Gly
 370 375 380
 Lys Leu Ser Lys Gly Leu Lys Gly Ser Ile Ile Cys Leu Val Gly Pro
 385 390 395 400
 Pro Gly Val Gly Lys Thr Ser Ile Gly Arg Thr Leu Leu Lys Ser Cys
 405 410 415
 Ile Glu Ser Ser Ser Val Ser Gln
 420

<210>46

<211>122

<212>PRT

<213>Chlamydia pneumoniae

<400>46

Arg Met Phe Leu Gln Phe Phe His Pro Ile Val Phe Ser Asp Gln Ser
 1 5 10 15
 Leu Ser Phe Leu Pro Tyr Leu Gly Lys Ser Ser Gly Ile Ile Glu Lys
 20 25 30
 Cys Ser Asn Ile Val Glu His Tyr Leu His Leu Gly Gly Asp Thr Ser
 35 40 45
 Val Ile Ile Thr Gly Val Ser Gly Ala Thr Phe Leu Ser Val Asp His
 50 55 60
 Ala Leu Pro Ile Ser Lys Ser Glu Lys Ile Ile Lys Ile Leu Ser Tyr
 65 70 75 80
 Ile Leu Ile Leu Pro Leu Ile Leu Ala Leu Phe Ile Lys Ile Val Leu
 85 90 95
 Arg Ile Ile Leu Phe Xaa Lys Tyr Arg Gly Leu Ile Xaa Asp Val Lys
 100 105 110
 Lys Glu Asp Leu Glu Lys Asn Thr Tyr Thr
 115 120

<210>47

<211>150

<212>PRT

<213>Chlamydia pneumoniae

<400>47

Ser Asn Lys Asn Glu Arg Asn Glu Asn Ile Tyr Cys Phe Asn Leu Phe
 1 5 10 15
 Arg Tyr Ile Arg Phe Phe Ala Ala Leu Asn Ile Arg Thr Asn Asp Gly
 20 25 30
 Leu Arg Phe Cys Tyr Ser Tyr Ile Leu Leu Arg Pro Met Leu Leu Asp
 35 40 45
 Ser Ser Leu Leu Arg Lys Gly Gly Gln Glu Leu Leu Lys Lys Phe Gln
 50 55 60
 Ile Lys Leu Arg Thr Thr Ser Ile Lys Ser Ser Leu Ile Ser Leu Arg
 65 70 75 80
 Gln Gln Leu Gly Lys Arg Glu Ala Thr Gln Ser Asp Ile Leu Tyr Gly
 85 90 95
 Thr Ser Arg Phe Gln Tyr Leu Asn Ser Phe Glu Ile Glu Asp Pro Arg
 100 105 110
 Ile Pro Pro Thr Met Ala Ala Gln Leu Gln Glu Ile Ile Trp Ser Arg
 115 120 125
 Ser Val Met Glu Leu Lys Ile Lys Phe Tyr Val Tyr Leu Asn Ser Glu
 130 135 140
 Arg Asn Lys Thr Lys Pro
 145 150

<210>48

<211>392

<212>PRT

<213>Chlamydia pneumoniae

<400>48

Met Asp Tyr Tyr Ser Ile Leu Gly Ile Ser Lys Thr Ala Ser Ala Glu
 1 5 10 15
 Glu Ile Lys Lys Ala Tyr Arg Lys Leu Ala Val Lys Tyr His Pro Asp
 20 25 30
 Lys Asn Pro Gly Asp Ala Ala Ala Glu Lys Arg Phe Lys Glu Val Ser
 35 40 45
 Glu Ala Tyr Glu Val Leu Ser Asp Pro Gln Lys Arg Asp Ser Tyr Asp
 50 55 60
 Arg Phe Gly Lys Asp Gly Pro Phe Ala Gly Ala Gly Phe Gly Gly
 65 70 75 80
 Ala Gly Gly Met Gly Asn Met Glu Asp Ala Leu Arg Thr Phe Met Gly
 85 90 95
 Ala Phe Gly Gly Glu Phe Gly Gly Gly Ser Phe Phe Asp Gly Leu Phe
 100 105 110
 Gly Gly Leu Gly Glu Ala Phe Gly Met Arg Ser Asp Pro Ala Gly Ala
 115 120 125
 Arg Gln Gly Ala Ser Lys Lys Val His Ile Asn Leu Thr Phe Glu Glu
 130 135 140
 Ala Ala His Gly Val Glu Lys Glu Leu Val Val Ser Gly Tyr Lys Ser
 145 150 155 160
 Cys Glu Thr Cys Ser Gly Gln Gly Ala Val Asn Pro Gln Gly Ile Lys
 165 170 175
 Ser Cys Glu Arg Cys Lys Gly Ser Gly Gln Val Val Gln Ser Arg Gly
 180 185 190
 Phe Phe Ser Met Ala Ser Thr Cys Pro Glu Cys Gly Gly Glu Gly Arg
 195 200 205
 Ile Ile Thr Asp Pro Cys Ser Ser Cys Arg Gly Gln Gly Arg Val Lys
 210 215 220
 Asp Lys Arg Ser Val His Val His Ile Pro Ala Gly Val Asp Ser Gly
 225 230 235 240
 Met Arg Leu Lys Met Glu Gly Tyr Gly Asp Ala Gly Gln Asn Gly Ala
 245 250 255
 Pro Ser Gly Asp Leu Tyr Val Phe Ile Asp Val Glu Ser His Pro Val
 260 265 270
 Phe Glu Arg Arg Gly Asp Asp Leu Ile Leu Glu Leu Pro Ile Gly Phe
 275 280 285

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Val Asp Ala Ala Leu Gly Met Lys Lys Glu Ile Pro Thr Leu Leu Lys
 290 295 300
 Thr Glu Gly Ser Cys Arg Leu Thr Val Pro Glu Gly Ile Gln Ser Gly
 305 310 315 320
 Thr Ile Leu Lys Val Arg Asn Gln Gly Phe Pro Asn Val His Gly Lys
 325 330 335
 Gly Arg Gly Asp Leu Leu Val Arg Ile Ser Val Glu Thr Pro Gln Asn
 340 345 350
 Leu Ser Glu Glu Gln Lys Glu Leu Leu Arg Thr Phe Ala Ser Thr Glu
 355 360 365
 Lys Ala Glu Asn Phe Pro Lys Lys Arg Ser Phe Leu Asp Lys Ile Lys
 370 375 380
 Gly Phe Phe Ser Asp Phe Thr Val
 385 390

<210>49

<211>258

<212>PRT

<213>Chlamydia pneumoniae

<400>49

Met Gly Val Val Gln Asn Gln Val Ile Ser Ser Ile Arg Asp Val Leu
 1 5 10 15
 Lys Leu Val Trp Glu Leu Arg Phe Ala Glu His Lys Met Leu Leu Leu
 20 25 30
 Ser Arg Gln Ser Gly Ser Gly Gly Thr Phe Gln Leu Ser Cys Ala Gly
 35 40 45
 His Glu Leu Ala Gly Val Leu Ala Gly Lys Ser Leu Ile Pro Gly Lys
 50 55 60
 Asp Trp Ser Phe Pro Tyr Tyr Arg Asp Gln Gly Phe Pro Ile Gly Leu
 65 70 75 80
 Gly Cys Asp Leu Ser Glu Ile Phe Ala Ser Phe Leu Ala Arg Thr Thr
 85 90 95
 Pro Asn His Ser Ser Ala Arg Met Met Pro Tyr His Tyr Ser His Lys
 100 105 110
 Lys Leu Arg Ile Cys Cys Gln Ser Ser Val Val Gly Thr Gln Phe Leu
 115 120 125
 Gln Ala Ala Gly Arg Ala Trp Ala Val Lys His Ser Ser Ala Asp Glu
 130 135 140
 Val Val Tyr Val Ser Gly Gly Asp Gly Ala Thr Ser Gln Gly Glu Phe
 145 150 155 160
 His Glu Met Leu Asn Phe Val Ala Leu His Gln Leu Pro Leu Ile Thr
 165 170 175
 Val Ile Gln Asn Asn His Trp Ala Ile Ser Val Pro Phe Glu Asp Gln
 180 185 190
 Cys Gly Ala Asp Leu Ala Ser Leu Gly Arg Cys His Gln Gly Leu Ala
 195 200 205
 Val Tyr Glu Val Asp Gly Gly Asn Tyr Thr Ser Leu Thr Glu Thr Phe
 210 215 220
 Ser His Ala Val Asp Gln Ala Arg Gln His Ser Val Pro Ala Leu Ile
 225 230 235 240
 Leu Ile Asp Val Val Arg Leu Ser Ser His Ser Asn Ser Asp Asn Gln
 245 250 255
 Glu Lys

<210>50

<211>410

<212>PRT

<213>Chlamydia pneumoniae

<400>50

Met Asp Lys Asp Pro Leu Ile Leu Leu Glu Lys Glu Ala Ile Asn Val
 1 5 10 15
 Phe Gly Leu Ser Pro Phe Glu Ile Glu Glu Ile Lys Ala Glu Ala Gln
 20 25 30
 Glu Glu Val Arg Lys Ser Cys Glu Ile Ala Glu Ala Leu Pro Phe Pro
 35 40 45

Ser Lys Gly Ser Thr Ser His Glu Val Phe Ser Pro Tyr Thr Glu Thr
 50 55 60
 Leu Ile Asp Tyr Glu Asn Ser Glu Ser Ala Gln Asn Leu Arg Asn Ser
 65 70 75 80
 Glu Pro Lys Val Met Arg Asp Ala Ile Ser Glu Ala Leu Val Glu Glu
 85 90 95
 Met Thr Arg Asp Ser Gly Val Ile Val Phe Gly Glu Asp Val Ala Gly
 100 105 110
 Asp Lys Gly Gly Val Phe Gly Val Thr Arg Asn Leu Thr Glu Lys Phe
 115 120 125
 Gly Pro Gln Arg Cys Phe Asn Ser Pro Leu Ala Glu Ala Thr Ile Ile
 130 135 140
 Gly Thr Ala Ile Gly Met Ala Leu Asp Gly Ile His Lys Pro Val Val
 145 150 155 160
 Glu Ile Gln Phe Ala Asp Tyr Ile Trp Pro Gly Ile Asn Gln Leu Phe
 165 170 175
 Ser Glu Ala Ser Ser Ile Tyr Tyr Arg Ser Ala Gly Glu Trp Glu Val
 180 185 190
 Pro Leu Val Ile Arg Ala Pro Ser Gly Gly Tyr Ile Gln Gly Gly Pro
 195 200 205
 Tyr His Ser Gln Ser Ile Glu Gly Phe Leu Ala His Cys Pro Gly Ile
 210 215 220
 Lys Val Ala Tyr Pro Ser Asn Ala Ala Asp Ala Lys Ala Leu Leu Lys
 225 230 235 240
 Ala Ala Ile Arg Asp Pro Asn Pro Val Val Phe Leu Glu His Lys Ala
 245 250 255
 Leu Tyr Gln Arg Arg Ile Phe Ser Ala Cys Pro Val Phe Ser His Asp
 260 265 270
 Tyr Val Leu Pro Phe Arg Lys Ala Ala Ile Val His Pro Gly Lys Asp
 275 280 285
 Leu Thr Ile Val Ser Trp Gly Met Pro Leu Val Leu Ser Leu Glu Val
 290 295 300
 Ala Gln Glu Leu Ala Ser Arg Gly Ile Ser Ile Glu Val Ile Asp Leu
 305 310 315 320
 Arg Thr Met Val Pro Cys Asp Phe Ala Thr Val Leu Lys Ser Leu Glu
 325 330 335
 Lys Thr Gly Arg Leu Leu Val Ile His Glu Ala Ser Glu Phe Cys Gly
 340 345 350
 Phe Gly Ser Glu Leu Val Ala Thr Met Ser Glu Gln Gly Tyr Ala Tyr
 355 360 365
 Leu Asp Ala Pro Ile Arg Arg Leu Gly Gly Leu His Ala Pro Val Pro
 370 375 380
 Tyr Ser Lys Val Leu Glu Asn Glu Val Leu Pro His Lys Glu Ser Ile
 385 390 395 400
 Leu Gln Ala Ala Lys Ser Leu Ala Glu Phe
 405 410

<210>51

<211>429

<212>PRT

<213>Chlamydia pneumoniae

<400>51

Val Asn Phe Leu Leu Pro Thr Thr Cys Arg Gly Ile Leu Met Ala Glu
 1 5 10 15
 Ile Ser Thr Pro Ser Leu Pro Asp Ser Ser Ile Val Ser Gln Lys Thr
 20 25 30
 Pro Pro Val Pro Asp Pro Asp Ser Pro Asp His Ile Pro Thr Ile
 35 40 45
 Pro Thr Gln Ala Pro Phe Lys Pro Gln Arg Lys Lys Glu Thr Pro Ser
 50 55 60
 Ser Ile Val Asn Ala Ile Ala Phe Ala Ile Leu Ala Phe Leu Ser Cys
 65 70 75 80
 Leu Gly Gly Val Phe Ala Ile Cys Leu Gly Cys Ser Leu Glu Ile Thr
 85 90 95
 Met Pro Leu Phe Ile Leu Thr Ala Val Phe Ile Ala Phe Thr Leu Leu

100 105 110
 Tyr Phe Ile His Tyr Leu Glu Lys Pro Lys Ile Pro Glu Pro Leu Pro
 115 120 125
 Thr Pro Pro Pro Ser Pro Thr Leu Arg Ala Pro Thr Leu Thr Pro Glu
 130 135 140
 Ile Pro Ala Pro Ala Pro Gly Ile Pro Leu Pro Pro Thr Leu Pro Lys
 145 150 155 160
 Val Asp Arg Thr Lys Leu Thr Cys Asn Pro Asp Ile His Tyr Pro Ser
 165 170 175
 Thr Tyr Asp Pro Lys Ala Cys Phe Ser Leu Leu Lys Gln Leu Phe Ser
 180 185 190
 Leu Asp Pro Glu Thr Arg Pro Glu Asp Arg Lys Tyr Ser Asn Lys Leu
 195 200 205
 Ala Ser Ile Leu Leu Arg Ser Lys Glu Lys Ser Gly Phe Arg Phe His
 210 215 220
 Cys Phe Lys Gly His Phe Ser His Asp Lys Ile Leu Asn Lys Lys Ser
 225 230 235 240
 Gly Ala Val Val Ile Ser Ser His Ser Ser Met Asp Phe Ser Thr Thr
 245 250 255
 Leu Gly Arg Ala Phe Ala Val Thr Thr Cys Leu Gln Arg Ser Cys Trp
 260 265 270
 Glu Lys Ile Lys Asn Asn Ile Pro Thr Pro Glu Lys His Leu Pro Ile
 275 280 285
 Gly Ser Cys Val Ser Gly Pro Trp Asp Val Glu Glu Gly Ala Gln Leu
 290 295 300
 Tyr Thr Ser His Leu Ile Val Ile Asn Pro Pro Thr Leu Glu Thr Leu
 305 310 315 320
 Ile Lys Glu Lys Met Arg Arg Ala Ile Thr Leu Lys Asp Phe Ser Met
 325 330 335
 Lys Glu Ala Phe Thr Asn Leu Val Leu Ala Tyr Leu Gln Cys Phe Asp
 340 345 350
 Ile Cys Ile Glu His Asn Leu Glu Ser Val Gln Leu Glu Val Phe Gly
 355 360 365
 Leu Asn Asn Leu Ser Ala Asp Gln Glu Glu Phe Thr Thr Trp Glu Ser
 370 375 380
 Cys Cys His Leu Ala Leu Glu Ser Val Arg Ile Leu Leu Ala Ser
 385 390 395 400
 Lys Glu Glu Tyr Ala Leu Ser Asn Val Ser Val Asn Ser Ile Ser Gln
 405 410 415
 Val Pro Leu Gln Thr Ala Cys Arg Ala Leu Phe Leu Asn
 420 425

<210>52

<211>524

<212>PRT

<213>Chlamydia pneumoniae

<400>52

Thr Thr Leu Glu Glu Asp Ala Gly Ser Ser Leu Lys Pro Leu Pro Lys
 1 5 10 15
 Thr Phe Pro Cys Ala Thr Ala Leu Tyr Ile Thr His Arg Arg Glu Arg
 20 25 30
 Lys Ser Glu His Gln Met Trp Asn Arg Cys Gln Val Phe Ser Ser Phe
 35 40 45
 Phe Phe Arg Tyr Pro Ile Ser Ser Trp Leu Ile Arg Leu Arg Ala Ser
 50 55 60
 Cys Glu Cys Phe Gln Gln Arg His Pro Ile Phe Leu Cys Gly Leu Tyr
 65 70 75 80
 Trp Leu Ala Gly Ile Thr Ser Arg Gly Tyr Pro Glu Cys Ser Ala Leu
 85 90 95
 Ile Leu Ile Phe Leu Gly Met Phe Leu Pro Arg Asn Pro Lys Gln Trp
 100 105 110
 Leu Pro Leu Ala Ser Ala Trp Ile Ile Ser Leu Met Leu Thr Pro Ala
 115 120 125
 Pro Phe Leu His Asp Gly Pro Ile Ser Gly Thr Phe Val Ile His His
 130 135 140

Ala Gly Gly Gln Gly Xaa Thr Thr Glu Lys Leu Phe Val Phe Arg Arg
 145 150 155 160
 Pro Val Gly Lys Arg Ala His His Leu Xaa Cys Gln Ile Leu Ser Glu
 165 170 175
 Ser Arg Leu Glu Leu Lys Lys Val Tyr Glu Leu Glu Gly Thr Leu His
 180 185 190
 His Thr Ser Gln Ile Val Phe Lys Ser Asn Ala Cys Tyr Lys Glu Ile
 195 200 205
 Pro Arg Ser Arg Phe Tyr Ile Met Lys Glu Lys Cys Arg Glu Ser Ser
 210 215 220
 Cys His Phe Leu Asn His Arg Phe Pro Ser Ser Glu Val Gly Pro Phe
 225 230 235 240
 Ala Ser Ser Leu Leu Leu Gly Thr Pro Leu Pro Gln Asn Leu Arg Asp
 245 250 255
 Leu Phe Arg Gln Lys Gly Leu Ser His Leu Phe Ala Ile Ser Gly Trp
 260 265 270
 His Phe Ser Leu Cys Ala Thr Thr Leu Trp Met Leu Cys Ala Leu Leu
 275 280 285
 Pro Leu Lys Ile Lys Lys Ile Leu Ser Phe Ile Val Leu Thr Ser Leu
 290 295 300
 Ser Cys Ile Phe Pro Met Ser Leu Ser Val Trp Arg Ser Trp Ile Ser
 305 310 315 320
 Val Thr Leu Leu Cys Phe Ser Trp Cys Phe Ser Gly Ser Cys Ser Gly
 325 330 335
 Leu Asn Arg Leu Gly Ala Gly Phe Ile Leu Cys Ser Ile Phe Phe Ser
 340 345 350
 Arg Phe Ser Pro Thr Phe Val Leu Ser Phe Leu Ala Thr Leu Gly Ile
 355 360 365
 Leu Leu Phe Phe Pro Lys Ile Phe Ser Phe Leu Tyr Thr Pro Trp Thr
 370 375 380
 Gln Phe Leu Ser Pro Phe Trp Leu Tyr Pro Ile Arg Tyr Leu Ala Met
 385 390 395 400
 Thr Leu Ala Ile Ser Leu Ser Ala Gln Leu Phe Ile Val Leu Pro Ile
 405 410 415
 Met Gln Tyr Phe Gly Ser Leu Pro Leu Glu Gly Leu Leu Tyr Asn Leu
 420 425 430
 Ile Val Pro Phe Thr Ile Leu Pro Ile Ile Val Phe Leu Ile Ala Thr
 435 440 445
 Ile Ile Leu Pro Cys Cys Ser Pro Ile Thr Glu Ala Leu Ile Gln Gly
 450 455 460
 Phe Leu Ser His Pro Trp Leu His Asn Pro Asn Ile Leu Lys Thr Leu
 465 470 475 480
 Ser Phe Ala Pro Val Pro Pro Trp Met Leu Thr Leu Ala Ser Leu Ile
 485 490 495
 Leu Phe Phe Ile Gly Ile Leu Arg Thr Asn Val Ser Pro Tyr Ala Ser
 500 505 510
 Thr Ser Ala Thr Ser Tyr Arg Phe Ile Glu Thr Leu
 515 520

<210>53

<211>276

<212>PRT

<213>Chlamydia pneumoniae

<400>53

Ala Lys Ser Leu Trp Asp Ser Glu Arg Lys Lys Met Lys Lys Pro Asp
 1 5 10 15
 Asn Asp Ser Thr Phe Asp Val Arg Ser Phe Phe Pro Phe Asp Val Leu
 20 25 30
 Cys Ile Glu Gln Leu Arg Lys Glu Met Ser Trp Glu Val Val Ser Ala
 35 40 45
 Lys Ile Pro Arg Leu Pro Arg Gly Trp Tyr Glu Leu Met Gly Leu Ser
 50 55 60
 Lys Glu Asp Arg Ile Asp Phe Cys Leu Asp Phe Trp Cys Ser Val Leu
 65 70 75 80
 Gly Ile Glu His Lys Glu Ser Pro Ser Ile Cys Arg Phe Phe Ser Leu

85 90 95
 Leu Glu Thr Ile Glu Val Tyr Ile Tyr Arg Leu Glu Lys Glu Pro Tyr
 100 105 110
 Gln Leu Lys Met Phe Tyr Val Phe Arg Asp Gly Arg Cys Gly Phe Gln
 115 120 125
 Gly Glu Pro Pro Leu Leu Asp Phe Leu Gly His His Arg Leu Pro Pro
 130 135 140
 Leu Gly Asp Arg His Tyr Glu Lys Phe Phe Ser Ile His Asn Gly Phe
 145 150 155 160
 Gly Lys Trp Glu Asp Glu Gly Ile Phe Pro Met Arg Ser Leu Ala Lys
 165 170 175
 Val Gln Gln Lys Leu Arg Gln Gln Leu Val Val Met Asn Lys Met Gln
 180 185 190
 Ala Glu Asp Asn Cys Tyr Ser Leu Gly Ile Phe Pro Phe Tyr Gly Tyr
 195 200 205
 Glu Glu Pro Phe Ala Tyr Gln Ser Phe Phe Phe Asp Pro Glu Ile Arg
 210 215 220
 Arg Asp Leu Pro Ser Pro Asn Val Leu Leu Asn Glu Glu Ser Leu Glu
 225 230 235 240
 His Arg Ser Leu Glu Thr Ile Glu Leu Leu His Leu Ser Lys Ser Tyr
 245 250 255
 Tyr Pro Ser Phe Leu Ser Trp Leu Glu Asn Tyr Leu His Ser Glu Glu
 260 265 270
 Val Tyr Asn Glu
 275

<210>54

<211>113

<212>PRT

<213>Chlamydia pneumoniae

<400>54

Val Arg Arg Cys Ile Met Asn Glu Pro Thr Arg Thr Tyr Leu Glu Ser
 1 5 10 15
 Glu Lys Asp Thr Gln Asp Gln Ile Glu Glu Leu Gln Ala Thr Cys Ile
 20 25 30
 Val Lys Asn Ala Ala Gly Ile His Val Arg Pro Ala Gly Val Ile Val
 35 40 45
 Arg Leu Phe Asp Gly Glu Pro Cys Asp Val His Phe Thr Tyr Ala Gly
 50 55 60
 Lys Thr Ile Asn Ala Lys Ser Ile Met Ser Ile Leu Met Leu Gly Ala
 65 70 75 80
 Pro Gln Gly Gly Glu Ile Leu Val Thr Ile Arg Ser Lys Glu Ala His
 85 90 95
 Arg Ile Leu Gln Lys Ile Gln Asp Ala Phe Ser Ser Gly Phe Gly Glu
 100 105 110
 Leu

<210>55

<211>420

<212>PRT

<213>Chlamydia pneumoniae

<400>55

Met Asp Thr Gln Ser Ser Ile Gly Asn Glu Glu Trp Arg Ile Ala Gly
 1 5 10 15
 Thr Ser Val Val Ser Gly Met Ala Leu Gly Lys Val Phe Phe Leu Gly
 20 25 30
 Thr Ser Pro Leu His Val Arg Glu Leu Thr Leu Pro Gln Glu Glu Val
 35 40 45
 Glu His Glu Ile His Arg Tyr Lys Ala Leu Asn Arg Ser Lys Ser
 50 55 60
 Asp Ile Val Ala Leu Glu Gln Glu Val Thr Gly Gln Gln Gly Leu Gln
 65 70 75 80
 Glu Val Ser Ser Ile Leu Gln Ala His Leu Glu Ile Met Lys Asp Pro
 85 90 95
 Leu Leu Thr Glu Glu Val Val Asn Thr Ile Arg Lys Asp Arg Lys Asn

100 105 110
 Ala Glu Tyr Val Phe Ser Ser Val Met Gly Lys Ile Glu Glu Ser Leu
 115 120 125
 Thr Ala Val Arg Gly Met Pro Ser Val Val Asp Arg Val Gln Asp Ile
 130 135 140
 His Asp Ile Ser Asn Arg Val Ile Gly His Leu Cys Cys Gln His Lys
 145 150 155 160
 Ser Ser Leu Gly Glu Ser Asp Gln Asn Leu Ile Ile Phe Ser Glu Glu
 165 170 175
 Leu Thr Pro Ser Glu Val Ala Ser Ala Asn Ser Ala Tyr Ile Arg Gly
 180 185 190
 Phe Val Ser Leu Val Gly Ala Ala Thr Ser His Thr Ala Ile Val Ser
 195 200 205
 Arg Ala Lys Ser Ile Pro Tyr Leu Ala Asn Ile Ser Glu Glu Leu Trp
 210 215 220
 Asn Ile Ala Lys Arg Tyr Asn Gly Lys Leu Val Leu Ile Asp Gly Tyr
 225 230 235 240
 Arg Gly Glu Leu Ile Phe Asn Pro Lys Pro Ala Thr Leu Gln Ser Cys
 245 250 255
 Tyr Lys Lys Glu Leu Ser Val Val Ala His Thr Ser Gln Arg Leu Val
 260 265 270
 Arg Lys Ser Leu His Pro Ile Val Ser Ser His Ala Gly Ser Asp Lys
 275 280 285
 Asp Val Glu Asp Leu Leu Glu Asn Phe Pro Gln Thr Ser Ile Gly Leu
 290 295 300
 Phe Arg Ser Glu Phe Leu Ala Val Ile Leu Gly Arg Leu Pro Thr Leu
 305 310 315 320
 Arg Glu Gln Val Asp Leu Tyr Glu Lys Leu Ala Arg Phe Pro Gly Asp
 325 330 335
 Ser Pro Ser Val Leu Arg Leu Phe Asp Phe Gly Glu Asp Lys Pro Cys
 340 345 350
 Pro Gly Ile Lys Asn Lys Lys Glu Arg Ser Ile Arg Trp Leu Leu Asp
 355 360 365
 Tyr Ser Val Ile Leu Glu Asp Gln Leu Gln Ala Ile Ala Lys Ala Ser
 370 375 380
 Leu Gln Gly Ser Ile Lys Val Leu Ile Pro Gly Val Ser Asp Val Ser
 385 390 395 400
 Glu Ile Ile Glu Val Lys Lys Lys Trp Glu Thr Ile Gln Thr Arg Phe
 405 410 415
 Pro Lys Arg Pro
 420

<210>56

<211>102

<212>PRT

<213>Chlamydia pneumoniae

<400>56

Thr Ser Lys Cys Asn Phe Ala Pro Ser Ser Asp Pro His Asp Ser Pro
 1 5 10 15
 Cys Thr Ser Ser Cys Glu Gln Asn Gln Val Pro Val Ser Ile Cys Gly
 20 25 30
 Glu Ala Ala Gly Gln Leu Ser Leu Thr Pro Leu Phe Ile Gly Leu Gly
 35 40 45
 Val Gln Glu Leu Ser Val Ala Met Pro Val Ile Asn Arg Leu Arg Asn
 50 55 60
 His Ile Ala Leu Leu Glu Leu Asn Ser Cys Leu Glu Ile Thr Glu Ala
 65 70 75 80
 Leu Leu Gln Ala Lys Thr Cys Ser Glu Val Glu Glu Leu Leu Asn Arg
 85 90 95
 Asn Asn Lys Ile Thr Ser
 100

<210>57

<211>98

<212>PRT

<213>Chlamydia pneumoniae

<400>57

Ile Ser Met Gly Ser Gly Tyr Ala Lys Lys Lys Lys Glu Ala Lys Ile
 1 5 10 15
 Met Glu Gln Gln Phe Leu Glu Met Glu Ala Ser Leu Leu Glu Lys Arg
 20 25 30
 Tyr Glu Gly Gln Ala Gly Asn Gly Leu Val Ser Val Val Ile Asn Gly
 35 40 45
 Lys Cys Asp Leu Ile Ser Val Lys Val Gln Pro Thr Cys Leu Asp Pro
 50 55 60
 Glu Asp Pro Glu Val Ile Glu Asp Leu Phe Arg Ala Ala Phe Lys Leu
 65 70 75 80
 Ala Lys Glu Gln Met Asp Gln Glu Met Ser Leu Met Arg Ser Thr Met
 85 90 95
 Pro Phe

<210>58

<211>271

<212>PRT

<213>Chlamydia pneumoniae

<400>58

Val Val Val Lys Lys Cys Ile Phe Lys Gly Phe Leu Lys Lys Arg Ser
 1 5 10 15
 Trp Arg Ser Tyr Arg Leu Trp Leu Lys Met Thr Ile Leu Arg Arg
 20 25 30
 Lys Lys His Trp Arg Arg Ser Pro Val Gln His Lys Glu Ala Cys Val
 35 40 45
 Met Gln Asn Leu Phe Met Thr Tyr Val Ile Ser Leu Phe Pro Lys Ser
 50 55 60
 Leu Ser Pro Asp Thr Val Ala Gln Ala Leu Gly Phe Ala Ser Gln Asp
 65 70 75 80
 Ser Leu Arg Thr Leu Asp Asn Ala Ile Leu Gln Arg Asp Tyr Ala Thr
 85 90 95
 Ala Leu Gly Ile Val Thr Asp Phe Leu Asn Ser Gly Val Ala Pro Val
 100 105 110
 Thr Phe Leu His Asp Leu Thr Leu Phe Tyr Arg Asn Leu Leu Leu Thr
 115 120 125
 Asn Ser Thr Thr Ser Lys Phe Ser Ser Gln Tyr Lys Thr Glu Gln Leu
 130 135 140
 Leu Glu Ile Ile Asp Phe Leu Gly Glu Ser Ala Lys His Leu Gln Asn
 145 150 155 160
 Thr Ile Phe Glu Gln Thr Phe Leu Glu Thr Val Ile Ile His Ile Ile
 165 170 175
 Arg Ile Tyr Gln Arg Pro Val Leu Ser Glu Leu Ile Ser Ser Ile Lys
 180 185 190
 Ser Arg Gln Phe Glu Gly Leu Arg Asn Ile Lys Glu Pro Thr Leu Thr
 195 200 205
 Gln Gln Val Ser Ala Pro Gln Pro Gln Pro Thr Tyr Lys Glu Gln Ser
 210 215 220
 Phe Leu Glu Lys Lys Asn Gln Pro Ala Ala Glu Gly Lys Ile Ile Ser
 225 230 235 240
 Val Glu Val Lys Ser Ser Ala Ser Ile Lys Ser Ala Ala Val Asp Thr
 245 250 255
 Leu Leu Gln Phe Ala Val Val Glu Phe Ser Gly Ile Leu Arg Gln
 260 265 270

<210>59

<211>233

<212>PRT

<213>Chlamydia pneumoniae

<400>59

Met Thr Leu Gln Pro Tyr Gln Ala Ser Ser Arg Lys Tyr Arg Pro Gln
 1 5 10 15
 Ile Phe Arg Glu Ile Leu Gly Gln Ser Ser Val Val Ala Val Leu Lys
 20 25 30
 Asn Ala Leu Val Phe Asn Arg Ala Ala His Ala Tyr Leu Phe Ser Gly

35 40 45
 Ile Arg Gly Thr Gly Lys Thr Thr Leu Ala Arg Ile Leu Ala Lys Ala
 50 55 60
 Leu Asn Cys Val His Leu Ser Glu Asp Gly Glu Pro Cys Asn Gln Cys
 65 70 75 80
 Phe Ser Cys Lys Glu Ile Ala Ser Gly Ser Ser Leu Asp Val Leu Glu
 85 90 95
 Ile Asp Gly Ala Ser His Arg Gly Ile Glu Asp Ile Arg Gln Ile Asn
 100 105 110
 Glu Thr Val Leu Phe Thr Pro Val Lys Ala Lys Phe Lys Ile Tyr Ile
 115 120 125
 Ile Asp Glu Val His Met Leu Thr Lys Glu Ala Phe Asn Ala Leu Leu
 130 135 140
 Lys Thr Leu Glu Glu Pro Pro Gln His Val Lys Phe Phe Phe Ala Thr
 145 150 155 160
 Thr Glu Ile His Lys Ile Pro Gly Thr Ile Leu Ser Arg Cys Gln Lys
 165 170 175
 Met His Leu Gln Arg Ile Pro Glu Lys Thr Ile Leu Glu Lys Leu Ser
 180 185 190
 Leu Met Ala Gln Asp Asp His Ile Glu Ala Ser Gln Glu Ala Leu Ala
 195 200 205
 Pro Ile Ala Arg Ala Ala Gln Gly Ser Leu Arg Asp Ala Glu Ser Leu
 210 215 220
 Tyr Asp Leu Arg Asn Ile Phe Ile Ser
 225 230
 <210>60
 <211>346
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>60
 Cys Lys Tyr Leu Tyr His His Ser Tyr Pro Pro Pro Gln His Ser Val
 1 5 10 15
 Gly Ser Ile Ser Arg Tyr Lys Leu Arg Val Leu Ala Ile Thr Phe
 20 25 30
 Leu Val Leu Gly Val Leu Leu Leu Ile Ser Gly Ala Leu Phe Leu Thr
 35 40 45
 Leu Gly Ile Pro Gly Leu Thr Ala Gly Val Ser Phe Gly Leu Gly Ile
 50 55 60
 Gly Leu Ser Ala Leu Gly Gly Val Leu Val Val Ser Gly Leu Leu Cys
 65 70 75 80
 Leu Leu Val Lys Arg Glu Val Ser Lys Val Cys Pro Glu Glu Ile Pro
 85 90 95
 Ala Val Gln Pro Glu Glu Thr Pro Glu Gly Val Pro Val Thr Pro Phe
 100 105 110
 Glu Lys Pro Ala Leu Asp Glu Ala Gln Lys Glu Gln Lys Thr Gln Lys
 115 120 125
 Ile Leu Asp Gln Leu Pro Gln Glu Leu Asp Gln Leu Asp Arg Tyr Ile
 130 135 140
 Gln Glu Val Phe Ala Cys Leu Gly Pro Leu Lys Asp Leu Lys Tyr Glu
 145 150 155 160
 Asp Gln Gly Phe Leu Gln Asp Val Lys Glu Glu Phe Gln Val Phe Asp
 165 170 175
 Phe Val Gln Lys Asp Met Ile Ala Glu Phe Val Glu Leu Gln Gln Ile
 180 185 190
 Leu Cys Gln Glu Gly Arg Leu Leu Glu Phe Val Ile Asn Gln Thr Arg
 195 200 205
 Tyr Ile Gly Arg Asp Leu Phe Lys Arg Glu Asp Ser Leu Tyr Lys Leu
 210 215 220
 Trp Glu Trp Leu Gly Tyr Leu Pro Ser Gly Asp Val Arg Gly Glu Arg
 225 230 235 240
 Leu Lys Lys Ser Ala Arg Glu Val Val Asp Arg Phe Met Arg Thr Thr
 245 250 255
 Cys Asn Ile Arg Lys Ile Ala Met Thr Phe Asp Arg His Val Tyr Ser
 260 265 270

Val Ala Lys Thr Ala Phe Glu Lys Ala Phe Gly Ala Leu Glu Thr Cys
 275 280 285
 Val Tyr Glu Ser Met Arg Glu Ser Tyr Arg Glu Ala Phe Cys Glu Tyr
 290 295 300
 Glu Lys Ala Lys Leu Leu Gly Asp Glu Glu Lys Ser Ala His Ala Glu
 305 310 315 320
 Gln Arg Phe Gln Asp Ile Lys Asn Arg Trp Glu Asp Val Lys Asp Ala
 325 330 335
 Phe Phe Trp Val Lys Glu Asp Gly Glu Asp
 340 345

<210>61

<211>145

<212>PRT

<213>Chlamydia pneumoniae

<400>61

Lys Lys Met Gly Lys Ile Glu Ile Asp Asp Ala Ile Gly Asn Ser Cys
 1 5 10 15
 Lys Trp Ser Glu Arg Tyr Glu Glu His Arg Ile Thr Arg Ala Arg Trp
 20 25 30
 Tyr Lys Val Ala Glu His Gln Leu Phe Asn Ala Thr Met Arg Val Lys
 35 40 45
 Asp Ser Leu Arg Glu His Asn Glu Ala Arg Val Ala Phe Glu Lys Glu
 50 55 60
 Arg Ser Lys Glu Asn Gln Arg Gln Val Gln Lys Lys Lys Glu Lys Arg
 65 70 75 80
 Leu Arg Asp Leu Lys Glu Leu His Asp Gln Glu Leu Pro Arg Ala Gln
 85 90 95
 Glu Arg Leu Arg Glu Leu Gln Ala Leu Tyr Pro Glu Ile Ala Val Ser
 100 105 110
 Val Val Glu Ala Arg Arg Glu Val Ala Ser Asp Leu Glu Lys Ala His
 115 120 125
 Glu Ser Ile Asp Lys His Tyr Gln Ser Cys Val Arg Glu Gln Glu Leu
 130 135 140
 Tyr
 145

Tyr

145

<210>62

<211>279

<212>PRT

<213>Chlamydia pneumoniae

<400>62

Glu Glu Glu Glu Lys Gln Glu Ala Glu Phe Arg Glu Asn Gly Thr Lys
 1 5 10 15
 Ile Arg Ser Met Glu Glu Val Ser Glu Tyr Leu Gln Gln Val Glu Asn
 20 25 30
 Gln Leu Glu Ser Cys Ser Lys Arg Leu Thr Lys Met Glu Thr Phe Ala
 35 40 45
 Leu Gly Val Arg Leu Glu Ala Lys Glu Glu Ile Glu Ser Ile Ile Leu
 50 55 60
 Ser Asp Val Val Asn Arg Phe Glu Val Leu Cys Arg Asp Ile Glu Asp
 65 70 75 80
 Met Leu Ser Arg Val Glu Glu Ile Glu Arg Met Leu Arg Met Ala Glu
 85 90 95
 Leu Pro Val Leu Pro Ile Lys Glu Ala Leu Thr Lys Ala Phe Val Gln
 100 105 110
 His Asn Ser Cys Lys Glu Lys Leu Thr Lys Val Glu Pro Tyr Phe Lys
 115 120 125
 Glu Ser Pro Ala Tyr Leu Thr Ser Glu Asn Arg Leu Gln Ser Leu Asn
 130 135 140
 Gln Thr Leu Gln Arg Ala Tyr Lys Glu Ser Gln Lys Val Ser Gly Leu
 145 150 155 160
 Glu Ser Glu Val Arg Ala Cys Arg Glu Gln Leu Lys Asp Gln Val Arg
 165 170 175
 Gln Phe Glu Thr Gln Gly Val Ser Leu Ile Lys Glu Glu Ile Leu Phe
 180 185 190

Val Thr Ser Thr Phe Arg Thr Lys Phe Ser Tyr His Ser Phe Arg Leu
 195 200 205
 His Val Pro Cys Met Arg Leu Tyr Glu Glu Tyr Tyr Asp Asp Ile Asp
 210 215 220
 Leu Glu Arg Thr Arg Ala Arg Trp Met Ala Met Ser Glu Arg Tyr Arg
 225 230 235 240
 Asp Ala Phe Gln Ala Phe Gln Glu Met Leu Lys Glu Gly Leu Val Glu
 245 250 255
 Glu Ala Gln Ala Leu Arg Glu Thr Glu Tyr Trp Leu Tyr Arg Glu Glu
 260 265 270
 Arg Lys Ser Lys Lys Lys His
 275
 <210>63
 <211>644
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>63
 Cys Lys Tyr Leu Tyr His His Ser Tyr Pro Pro Pro Pro Pro Pro
 1 5 10 15
 Asp Gln Ser Val Gly Ala Ser Phe Cys Leu Ser Lys Phe Arg Val Leu
 20 25 30
 Ala Ile Thr Phe Leu Val Leu Gly Val Leu Leu Leu Ile Ser Gly Ala
 35 40 45
 Leu Phe Leu Thr Leu Gly Ile Ser Gly Val Ser Leu Gly Val Gly Leu
 50 55 60
 Gly Leu Ser Ala Leu Gly Ser Val Leu Val Ile Ser Gly Phe Leu Leu
 65 70 75 80
 Leu Leu Glu Arg Arg Glu Val Ser Gly Val Gly Leu Glu Gly Ile Pro
 85 90 95
 Thr Gly Ile Pro Val Gly Pro Ser Ala Glu Pro Ser Ser Glu Glu Ile
 100 105 110
 Gln Lys Lys Gln Lys Ala Lys Gln Ile Leu Asp Gln Leu Pro Gln Glu
 115 120 125
 Leu Asp Gln Leu Asp Thr Asp Ile Gln His Val Leu Ser Cys Leu Gly
 130 135 140
 Lys Leu Lys Asp Leu Lys Cys Lys Asp Arg Gly Leu Leu Lys Asp Ala
 145 150 155 160
 Lys Glu Lys Leu Gln Val Phe Asp Phe Val Trp Lys Asp Met Met Met
 165 170 175
 Glu Phe Val Glu Leu Gln Gln Val Met Asp Gln Glu Ser Arg Tyr Leu
 180 185 190
 Glu Gly Leu Ile His Glu Val Gln Ser Ile Ala His Lys Leu Phe Val
 195 200 205
 Asp Asp Val Asn Ile Arg Ser His Leu Gly Glu Ser Cys Gly Tyr Leu
 210 215 220
 Pro Ser Glu Asp Val Arg Gly Glu Leu Leu Lys Arg Phe Ala Lys Glu
 225 230 235 240
 Val Val Ala Arg Phe Met Lys Val Thr Arg Asp Ile Arg Lys Ile Ala
 245 250 255
 Met Ala Phe Asn Lys Asn Ala Tyr Gly Ala Ala Lys Asn Ala Phe Asp
 260 265 270
 Lys Ala Phe Gly Ser Leu Glu Thr Cys Leu Tyr Lys Ser Leu Thr Lys
 275 280 285
 Ser Tyr Arg Asp Thr Phe Cys Asp Tyr Lys Arg Ala Lys Ile Leu Pro
 290 295 300
 Asp Glu Asn Asn Ser Ala Arg Ala Glu Gln Arg Phe Arg Glu Val Lys
 305 310 315 320
 Asp His Trp Glu Asp Leu Asn Glu Thr Val Phe Trp Val Lys Glu Asp
 325 330 335
 Gly Arg Ile Asp Ile Glu Val Leu Thr Ala Val Gly Gly Trp Pro Asp
 340 345 350
 Arg Tyr Pro Glu His Leu Ile Leu Glu Lys Arg Lys Asp Lys Val Met
 355 360 365
 Ser His Gln Leu Trp Glu Ala Thr Met Arg Val Lys Glu Ala Glu Val

370 375 380
 Thr Tyr Ser Val Ala Arg Val Ala Phe Glu Lys Asp Gly Ser Gln Gln
 385 390 395 400
 Asn Gln Lys Lys Phe Gln Glu Lys Thr Lys Glu Arg Leu Arg Cys Leu
 405 410 415
 Lys Asp Leu Arg Asp Gln Glu Cys His Arg Ala Gln Glu Arg Leu Glu
 420 425 430
 Lys Leu Thr Ala Leu Tyr Pro Glu Val Ser Val Ser Val Val Glu Thr
 435 440 445
 Glu Arg Glu Arg Lys Phe Asn Leu Glu Lys Ala Tyr Gly Asn Leu Glu
 450 455 460
 Glu Arg Tyr Gln Ser Val Val Gln Asp Gln Glu Asp Tyr Trp Thr Glu
 465 470 475 480
 Gln Lys Asn Arg Glu Ala Glu Phe Arg Ala Lys Gly Thr Lys Val Arg
 485 490 495
 Ser Met Glu Glu Val Ala Glu His Leu Gln Ile Leu Glu Asn Leu Leu
 500 505 510
 Glu Asp Cys Tyr Lys Arg Leu Ser Lys Ala Glu Thr Phe Ala Leu Gly
 515 520 525
 Val Glu Arg Glu Ala Thr Glu Glu Ile Glu Tyr Thr Ile Leu Ser Asp
 530 535 540
 Ala Ala Asn Arg Leu Lys Val Leu Cys Glu Asp Ile Glu Asp Thr Leu
 545 550 555 560
 Pro Arg Val Glu Glu Ile Glu Met Met Leu Arg Met Ala Glu Arg Pro
 565 570 575
 Leu His Pro Ile Lys Gln Ala Phe Thr Lys Ala Phe Val Gln Tyr Asn
 580 585 590
 Arg Cys Lys Glu Arg Leu Ala Lys Val Glu Pro Tyr Tyr Lys Glu Ser
 595 600 605
 Pro Ala Tyr Val Asn Ser Glu Glu Arg Leu Gln Ser Leu Asp Gln Ala
 610 615 620
 Ser Gln Cys Ile Gln Arg Val Pro Lys Gly Phe Lys Phe Arg Asn Gly
 625 630 635 640
 Ser Met Tyr Ile

<210>64

<211>114

<212>PRT

<213>Chlamydia pneumoniae

<400>64

Ser Lys Ile Cys Phe Ala Phe Cys Phe Phe Cys Ile Ser Ser Glu Glu
 1 5 10 15
 Gly Ser Ala Glu Gly Pro Thr Gly Ile Pro Val Gly Ile Pro Ser Lys
 20 25 30
 Pro Thr Pro Glu Thr Ser Arg Leu Ser Lys Ser Asn Arg Asn Pro Glu
 35 40 45
 Ile Thr Ser Thr Leu Pro Asn Ala Glu Ser Pro Lys Pro Thr Pro Arg
 50 55 60
 Glu Thr Pro Glu Ile Pro Asn Val Arg Lys Arg Ala Pro Glu Ile Ser
 65 70 75 80
 Lys Ser Thr Pro Arg Thr Lys Lys Val Ile Ala Lys Thr Arg Asn Leu
 85 90 95
 Asp Arg Gln Lys Glu Ala Pro Thr Asp Trp Ser Gly Gly Gly Gly Gly
 100 105 110
 Gly Gly

<210>65

<211>167

<212>PRT

<213>Chlamydia pneumoniae

<400>65

Ile Ala Lys Ser Asp Cys Arg Val Trp Ile Arg Leu His Ser Ala Tyr
 1 5 10 15
 Lys Glu Ser Gln Lys Val Ser Ser Leu Glu Thr Glu Ala Cys Thr Tyr

20 25 30
 Arg Glu Tyr Leu Arg Glu Gln Val Gln Gln Phe Glu Thr Gln Gly Val
 35 40 45
 Ser Leu Ile Lys Glu Glu Leu Leu Phe Leu Ser Ser Thr Leu Lys Ser
 50 55 60
 Lys Leu Ser Tyr Asp Pro Leu Ile Ala Asn Ile Pro Cys Met Lys Phe
 65 70 75 80
 Tyr Tyr Gln Tyr Tyr Asp Asp Ile Asp Lys Ala Arg Ala Gln Ser Arg
 85 90 95
 Trp Leu Glu Lys Ser Glu Arg Tyr Arg Asn Ala Lys Arg Arg Phe Gln
 100 105 110
 Glu Ile Val Lys Lys Gly Leu Phe Lys Glu Ala Lys Pro Leu Lys Lys
 115 120 125
 Glu Glu Tyr Arg Leu Leu Gln Glu Glu Arg Ser Asn Lys Glu Lys Arg
 130 135 140
 Leu Ile Tyr Asn Lys Met Ala Val Ala Arg Gln Arg Val Gln Glu Phe
 145 150 155 160
 Glu Ser Met Glu Ile Pro Glu
 165

<210>66

<211>235

<212>PRT

<213>Chlamydia pneumoniae

<400>66

Cys Lys Tyr Thr Tyr His Pro Pro Gln Leu Pro Pro Asp His Ser Val
 1 5 10 15
 Gly Ala Thr Ser Trp Gln Pro Lys Leu Arg Ile Leu Thr Ile Thr Phe
 20 25 30
 Leu Val Leu Gly Val Leu Leu Leu Ile Ser Gly Ala Leu Phe Leu Thr
 35 40 45
 Leu Gly Val Pro Gly Leu Ala Ala Gly Leu Ser Phe Gly Leu Gly Ile
 50 55 60
 Gly Leu Ser Ala Leu Gly Gly Val Leu Val Val Ser Gly Leu Leu Phe
 65 70 75 80
 Phe Leu Ile Arg Arg Gly Val Ser Lys Val Arg Pro Glu Glu Ile Pro
 85 90 95
 Val Thr Pro Ser His Glu Ala Gln Lys Ile Leu Cys Gln Leu Pro Gln
 100 105 110
 Glu Leu Asp Gln Leu Asp Thr Ser Ile Gln Glu Val Val Ser Cys Leu
 115 120 125
 Gly Lys Leu Lys Asp Leu Lys Tyr Glu Asp Gln Gly Leu Leu Thr Glu
 130 135 140
 Val Gln Glu Lys Leu Arg Val Phe Asp Phe Val Arg Lys Asp Met Val
 145 150 155 160
 Thr Glu Phe Leu Glu Leu Gln Gln Val Val Ala Gln Glu Gly Gln Phe
 165 170 175
 Leu Asp Tyr Leu Ile Asn Gln Val Gln Ser Ile Ser His Lys Leu Phe
 180 185 190
 Val Pro Asp Val Asn Ile Gly Ala His Leu Ala Glu Leu Cys Gly Tyr
 195 200 205
 Leu Pro Ser Gly Asp Val Arg Val Glu Arg Leu Lys Arg Ser Ala Arg
 210 215 220
 Gln Val Val Asp Arg Phe His Glu Gly Asp Leu
 225 230 235

<210>67

<211>526

<212>PRT

<213>Chlamydia pneumoniae

<400>67

Arg Glu Cys Cys Gly Val Ala Lys Asn Ala Phe Asp Lys Ala Phe Gly
 1 5 10 15
 Ala Leu Glu Glu Cys Val Tyr Lys Ser Leu Thr Glu Ser Tyr Arg Glu
 20 25 30
 Ala Phe Tyr Glu Tyr Glu Lys Ala Lys Ile Leu Arg Asn Glu Asp Val

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35 40 45
Glu Trp Leu Gln Asp Lys Asn Lys Ser Ala Arg Ala Glu Gln Arg Phe
50 55 60
Arg Glu Val Lys Asp Arg Trp Glu Asp Leu Lys Glu Thr Val Phe Trp
65 70 75 80
Val Lys Glu Asn Gly Cys Ile Asp Leu Glu Val Leu Thr Ala Val Gly
85 90 95
Gly Trp Pro Asp Arg Gly Pro Glu His Leu Ile Pro Glu Lys Arg Arg
100 105 110
Asn Lys Val Met Ser His Lys Leu Trp Glu Ala Thr Met Arg Met Lys
115 120 125
Gly Ala Glu Gly Thr Tyr Ser Val Ala Arg Val Ala Phe Glu Lys Asp
130 135 140
Gly Ser Arg Lys Asn Gln Lys Lys Phe Gln Glu Lys Thr Lys Glu Trp
145 150 155 160
Leu Arg Cys Leu Lys Asp Leu His Asp Gln Glu Cys His Arg Ala Arg
165 170 175
Glu Arg Leu Ala Glu Leu Glu Ala Leu Tyr Pro Glu Val Ser Val Ser
180 185 190
Val Val Glu Thr Glu Arg Glu Thr Lys Phe Lys Leu Glu Thr Ala Tyr
195 200 205
Gly Asn Leu Glu Glu Arg Tyr Gln Ser Val Val Arg Asp Gln Glu Asp
210 215 220
Tyr Trp Lys Glu Glu Glu Asn Lys Glu Ala Glu Phe Arg Glu Lys Gly
225 230 235 240
Thr Lys Val Arg Ser Pro Glu Glu Val Val Glu Tyr Leu Gln Ile Leu
245 250 255
Glu Asn Leu Leu Glu Asp Cys Ser Lys Gln Leu Thr Ile Ala Glu Val
260 265 270
Val Val Leu Gly Val Glu Leu Glu Ala Thr Ala Glu Phe Glu Tyr Thr
275 280 285
Ile Leu Ser Asp Ala Ala Asn Arg Leu Lys Val Leu Cys Glu Asp Ile
290 295 300
Glu Asp Ile Leu Pro Arg Val Glu Glu Ile Glu Ile Met Leu Arg Ile
305 310 315 320
Ala Glu Leu Pro Phe Leu Pro Ile Lys Gln Ala Phe Thr Lys Ala Phe
325 330 335
Leu Gln Tyr Asn Ser Cys Lys Asp Lys Leu Ala Lys Val Glu Pro Tyr
340 345 350
Cys Gln Glu Ser Val Asp Tyr Arg Arg Asn Lys Glu Arg Phe Gln Ser
355 360 365
Leu Asn Gln Asp Leu Gln Asn Val Tyr Gln Glu Cys Gln Lys Ala Thr
370 375 380
Gly Leu Glu Ser Glu Val Ser Ala Tyr Arg Asp His Leu Arg Glu Gln
385 390 395 400
Ile Thr Glu Phe Glu Thr Gln Gly Leu Asp Val Ile Lys Glu Glu Leu
405 410 415
Leu Phe Val Ser Ser Thr Leu Lys Ser Lys Leu Ser Tyr Asp Pro Leu
420 425 430
Ile Ala Asp Ile Pro Cys Met Lys Phe Tyr Glu Glu Tyr Tyr Asp Gly
435 440 445
Ile Asp Lys Ala Arg Val Gln Ser Arg Trp Leu Glu Lys Ser Glu Arg
450 455 460
Tyr Arg Lys Ala Lys Lys Gly Phe Gln Glu Met Leu Lys Glu Gly Leu
465 470 475 480
Phe Lys Glu Asp Gln Ala Leu Lys Lys Ala Glu Tyr Arg Leu Leu Arg
485 490 495
Glu Lys Arg Met Asn Lys Glu Lys Leu Leu Ile Cys Asn Lys Ile Glu
500 505 510
Ala Ala Gln Gln Arg Val Gln Glu Phe Gly Pro Ser Asp Ser
515 520 525
<210>68
<211>705
<212>PRT

<213>Chlamydia pneumoniae
 <400>68
 Met Lys Glu Leu Arg His Glu Ser Tyr Asn Arg Ala Leu His Lys Leu
 1 5 10 15
 Ser His Gln Trp Val Arg Tyr Phe Leu Tyr Thr Phe Val Ser Cys Ser
 20 25 30
 Phe Ile Val Ala Ile Phe Thr Phe Ala Trp Leu Lys Val Leu Tyr Val
 35 40 45
 Pro Glu Xaa Lys Ala Gly Glu Ile Ser Arg Ile Ser Leu Thr Ala Pro
 50 55 60
 Met Asp Phe Xaa Leu Ser Trp Ser Ala His Lys Phe Tyr Lys Arg Thr
 65 70 75 80
 Ala His Ile Ser Glu Ala Phe Gly Lys Val Tyr His Leu Thr Leu Ser
 85 90 95
 Pro Gly Ser Leu Leu Ser Lys Glu Gly Asn Ala Asp Glu Asn Thr Asp
 100 105 110
 Tyr Trp Phe Lys Lys Ala Ala Asp Phe Leu Leu Ser Thr Asn Phe Val
 115 120 125
 Asp Ser Ser Thr Gln Lys Cys Leu Lys Asp Leu Cys Ile Tyr Pro Pro
 130 135 140
 Leu Leu Gly Lys Glu Lys Lys Thr Leu Glu Ile Asn Ile Asn Ser Asn
 145 150 155 160
 Lys Gly Asn Val Ile Ala Gln Cys Phe Cys His Leu Lys Ile Phe Leu
 165 170 175
 Ile Gln Glu Asn Cys Pro Gln Pro Cys Phe Asp Ala Ile Met Asp Ile
 180 185 190
 Leu Lys Ile Ala Asn Phe Glu Val Ala Val Asp Lys Glu Met Ser Gly
 195 200 205
 Cys Val Lys Gly Glu Leu Leu Gly Lys Arg Cys Ile Glu Lys Ile Thr
 210 215 220
 Lys Gly Thr Pro Ile Leu Glu Lys Tyr Gln Arg Ile Asp Asp Arg Asp
 225 230 235 240
 Ala Lys Ile Leu Lys Gln Leu Arg Ala Gln Leu Leu Ser Val His Thr
 245 250 255
 Leu Phe Ser Cys Arg Ser Leu Trp Gly Ala Ile Phe Val Val Leu Leu
 260 265 270
 Ile Leu Leu Trp Gly Tyr Gly Ala Leu Lys Ala Leu Cys Pro Glu Met
 275 280 285
 Leu Lys Ser Pro Gln Arg Phe Met Leu Tyr Ile Ala Ile Leu Thr Leu
 290 295 300
 Ser Leu Leu Trp Cys Arg Gly Thr Glu Ile Phe Cys Ala Tyr Trp Val
 305 310 315 320
 Ser Tyr Leu Ser Tyr Pro Pro Ile Leu Pro Phe Thr Ala Val Leu Leu
 325 330 335
 Gly Tyr Phe Leu Gly Leu Pro Ile Ala Gly Phe Ser Cys Thr Phe Leu
 340 345 350
 Ala Leu Leu Tyr Thr Leu Gly Ser Asp Leu Trp Asn Asn Ser Trp Phe
 355 360 365
 Leu Ser Ile Asn Leu Leu Cys Ser Trp Arg Ile Leu Val Ser Leu His
 370 375 380
 Arg Val Ser Arg Leu Ser Ser Val Phe Trp Ala Cys Met Lys Leu Gly
 385 390 395 400
 Gly Val Ala Met Gly Ser Leu Leu Met Phe Arg Ile Phe Thr Asn Thr
 405 410 415
 Ile Ser Arg Glu Ala Leu Tyr Ala Asp Gly Ile Glu Ser Phe Val Tyr
 420 425 430
 Ser Leu Ile Thr Ala Ile Ser Val Val Ala Leu Ile Pro Val Phe Glu
 435 440 445
 Ala Ser Phe Gly Ala Ser Thr Asn Phe Ser Leu Leu Thr Tyr Leu Ser
 450 455 460
 Pro Glu Asn Ala Leu Leu Lys Arg Leu Phe Lys Glu Ala Pro Gly Thr
 465 470 475 480
 Tyr Gln His Ser Val Leu Val Gly Ser Leu Ala Glu Ala Ala Ala Gln
 485 490 495

Ala Ile Gly Ala Asp Ser Leu Tyr Cys Leu Val Ala Ala His Tyr His
 500 505 510
 Asp Ile Gly Lys Leu Ile Asn Pro Gly Phe Phe Ser Glu Asn Gln Lys
 515 520 525
 Ile Leu Gln Gln Ser Gly His Ser Leu Ser Pro Leu Glu Cys Ala Lys
 530 535 540
 Met Ile Met Arg His Ile Pro Glu Gly Val Asn Leu Ala Arg Gln Xaa
 545 550 555 560
 Gly Leu Pro Glu Ser Asp Ile Gln Val Ile Glu Glu His His Gly Thr
 565 570 575
 Ser Val Ile Arg Ser Ala Tyr Tyr Ser His Met Val Glu Asn Pro Ser
 580 585 590
 Thr Gly Ser Phe Asp Glu Glu Leu Phe Arg Tyr Ser Gly Asn Lys Pro
 595 600 605
 Ser Ser Lys Glu Thr Thr Ile Ile Met Ile Ala Asp Ser Phe Glu Ala
 610 615 620
 Ala Ser Arg Ser Leu Lys Asn Ala Ser Leu Pro Asp Leu Gln Arg Leu
 625 630 635 640
 Ile Asp Gln Ile Ile Gln Gly Lys Leu Gln Asp Gly Gln Phe Ser Cys
 645 650 655
 Ser Pro Ile Thr Leu Asp Glu Leu Ala Leu Ile Ser Lys Ser Met Val
 660 665 670
 Gln Thr Leu Tyr Gly Ala Leu His Ser Arg Met Lys Tyr Pro Glu Ile
 675 680 685
 Ser Tyr Gln Ile Ser Met Asp Ser Cys Pro Lys Pro Ser Ile Gly Gly
 690 695 700
 Thr
 705
 <210>69
 <211>224
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>69
 Val Ile Ser Cys Gln Gly Lys Arg Pro Leu Arg Tyr Cys Phe Leu Glu
 1 5 10 15
 Ile Gln Ile Leu Ala Lys Ala Gln Val His Glu Cys Ile Ser Phe Xaa
 20 25 30
 Arg Ser Trp Tyr Pro Lys Leu Trp Phe Gln Leu Ser Thr Thr Glu Thr
 35 40 45
 Thr Gly Asp Arg Glu Lys Lys Ile Pro Leu His Leu Val Glu Asn Ser
 50 55 60
 Tyr Phe Phe Thr Asp Gly Val Asp Ala Leu Val His Lys Gly Val Cys
 65 70 75 80
 Asp Leu Ala Ile His Ser Ala Lys Asp Leu Pro Glu Thr Pro Ser Leu
 85 90 95
 Pro Val Val Ala Ile Thr Arg Cys Leu His Pro Ala Asp Leu Leu Val
 100 105 110
 Tyr Ala Asp His Tyr Val His Glu Pro Leu Pro Leu Ser Pro Arg Leu
 115 120 125
 Gly Ser Ser Ser Leu Arg Arg Ser Ala Val Leu Lys Gln Leu Phe Pro
 130 135 140
 Gln Gly Gln Ile Leu Asp Ile Arg Gly Thr Ile Glu Glu Arg Leu Asp
 145 150 155 160
 Gln Leu His Arg Gly His Tyr Asp Ala Ile Val Leu Ala Lys Ala Ala
 165 170 175
 Ser Leu Arg Leu His Leu His His Ala Tyr Ser Ile Glu Leu Pro Pro
 180 185 190
 Pro Tyr His Ala Leu Gln Gly Ser Leu Ala Ile Thr Ala Lys Asp His
 195 200 205
 Ala Gly Lys Trp Lys Gln Leu Phe Thr Pro Ile His Cys His Ser Ser
 210 215 220
 <210>70
 <211>334
 <212>PRT

<213>Chlamydia pneumoniae

<400>70

Arg Ile Cys Asn Ala Asp Val Phe Glu Ser Glu Ala Leu Asn Ile Ser
 1 5 10 15
 Ser Pro Leu Ile Tyr Leu Phe Pro Glu Thr Asn Leu Asp Asn Ile Lys
 20 25 30
 Gln Gln Ile Ala Thr Leu Glu Pro Asp Ile Leu Ile Ile Asp Ser Ile
 35 40 45
 Gln Ile Ile Phe Asn Pro Thr Leu Asn Ser Ala Pro Gly Ser Val Ala
 50 55 60
 Gln Val Arg Glu Val Thr Tyr Glu Leu Met Gln Ile Ala Lys Ser Ala
 65 70 75 80
 Gln Ile Thr Thr Phe Ile Ile Gly His Val Thr Lys Ser Gly Glu Ile
 85 90 95
 Ala Gly Pro Arg Val Leu Glu His Leu Val Asp Thr Val Leu Tyr Phe
 100 105 110
 Glu Gly Asn Ser His Ala Asn Tyr Arg Met Ile Arg Ser Val Lys Asn
 115 120 125
 Arg Phe Gly Pro Thr Asn Glu Leu Leu Ile Leu Ser Met His Ala Asp
 130 135 140
 Gly Leu Lys Glu Val Ser Asn Pro Ser Gly Leu Phe Leu Gln Glu Lys
 145 150 155 160
 Thr Gly Pro Thr Thr Gly Ser Met Ile Ile Pro Ile Ile Glu Gly Ser
 165 170 175
 Gly Ala Leu Leu Ile Glu Leu Gln Ala Leu Val Ser Ser Ser Pro Phe
 180 185 190
 Ala Asn Pro Val Arg Lys Thr Ala Gly Phe Asp Pro Asn Arg Phe Ser
 195 200 205
 Leu Leu Leu Ala Val Leu Glu Lys Arg Ala Gln Val Lys Leu Phe Thr
 210 215 220
 Met Asp Val Phe Leu Ser Ile Thr Gly Gly Leu Lys Ile Ile Glu Pro
 225 230 235 240
 Ala Ala Asp Leu Gly Ala Leu Leu Ala Val Ala Ser Ser Leu Tyr Asn
 245 250 255
 Arg Leu Leu Pro Asn Asn Ser Ile Val Ile Gly Glu Val Gly Leu Gly
 260 265 270
 Gly Glu Ile Arg His Val Ala His Leu Glu Arg Arg Ile Lys Glu Gly
 275 280 285
 Lys Leu Met Gly Phe Glu Gly Ala Ile Leu Pro Glu Gly Gln Ile Ser
 290 295 300
 Ser Leu Pro Lys Glu Ile Arg Glu Asn Phe Arg Leu Gln Gly Val Lys
 305 310 315 320
 Thr Ile Lys Arg Cys Tyr Pro Ser Val Thr Leu Thr Pro Val
 325 330

<210>71

<211>97

<212>PRT

<213>Chlamydia pneumoniae

<400>71

Glu Thr Tyr Val Pro Leu Leu Pro Pro Arg Glu Glu Ile Leu Pro Leu
 1 5 10 15
 Met Ser Gly Asn Pro Lys Asn Leu Leu Gln Gln Phe Thr Gln Lys Gln
 20 25 30
 Phe Arg Val Leu Pro Val Tyr Gln Ser Thr Ala Val Thr Asp Ala Gln
 35 40 45
 Gly Asn Val Ser Tyr Gln Ile Gln Val Leu Val Asn Gln Glu Val Trp
 50 55 60
 Gly Glu Gly Asn Ala Ser Ser Lys Lys Glu Ala Glu Lys Ile Ala Ala
 65 70 75 80
 Gln Gln Ala Leu Asp Thr Tyr Gly Asn Lys Asn Gln Asn Thr Met Asp
 85 90 95
 Val

<210>72

<211>168

<212>PRT

<213>Chlamydia pneumoniae

<400>72

Ile Pro Asn Ser Lys Phe Lys Asp Gly Ala Leu Leu Ser Met His Pro
 1 5 10 15
 Pro Ile Asp Ile Thr Ala Ile Glu Ala Lys Leu Asn Phe Thr Phe Thr
 20 25 30
 Gln Pro Lys Leu Leu Glu Ile Ala Leu Thr His Pro Ser Tyr Lys Asn
 35 40 45
 Glu Ser Ala Val Gln Ile Glu Asp Ser Glu Arg Leu Glu Phe Leu Gly
 50 55 60
 Asp Ala Val Leu Gly Leu Ile Val Thr Glu His Leu Phe Leu Leu Phe
 65 70 75 80
 Pro Ser Met Asp Glu Gly Thr Leu Ser Thr Ala Arg Ala Ser Leu Val
 85 90 95
 Asn Ala Lys Ala Cys Cys Arg Tyr Thr Met Leu Gly Ile Gly Asp
 100 105 110
 Tyr Leu Leu Ile Gly Lys Gly Glu Lys Ile Gln Ser Glu Arg Gly Arg
 115 120 125
 Leu Ser Ala Tyr Ala Asn Leu Phe Glu Ser Ile Leu Gly Ala Val Tyr
 130 135 140
 Leu Asp Gly Gly Leu Ser Pro Ala Arg Lys Leu Thr Phe Pro Ser Phe
 145 150 155 160
 Leu Leu Glu Lys Lys Phe Phe Leu
 165

<210>73

<211>165

<212>PRT

<213>Chlamydia pneumoniae

<400>73

Cys Phe Trp Ile Cys Tyr Leu Ile Arg Ile Arg Met Arg Ser Ala Leu
 1 5 10 15
 His Leu Gln His Leu Arg His Phe His Asn His Gly Ser Ile Leu Phe
 20 25 30
 Glu Asn Leu Leu Thr Ile Lys Asp Cys Phe Leu Leu Glu Thr Lys Leu
 35 40 45
 Gln Asn Phe Ile Ala Lys Ala Ser Lys Thr Ile Asp Thr Val Arg Trp
 50 55 60
 Arg Glu Asn Ile Phe Arg Ser Met Pro Glu Ile Tyr Thr Val Val Arg
 65 70 75 80
 Lys Arg Arg Leu Asp Phe Phe Ala Ala Glu Leu Val His Arg Pro Lys
 85 90 95
 Leu Ser Leu Val Arg Asp Leu Trp Val Phe Pro Gly Glu Glu Ile Leu
 100 105 110
 Glu Gly Glu Glu Asp Cys Met Leu Phe Leu Leu Ser Gly Asp Arg
 115 120 125
 Ala Gly Ser Gly Ile Phe Phe Thr Gly Pro Tyr Pro Ser Asp Leu Tyr
 130 135 140
 Glu Leu Glu Lys Gly Thr Thr Gly Leu Leu Leu Ala Phe Ser Ser Val
 145 150 155 160
 Gly Ile Pro Val Ile
 165

<210>74

<211>595

<212>PRT

<213>Chlamydia pneumoniae

<400>74

Glu Phe Leu Lys Leu Ser Leu His Arg Ile Ser Leu Met Lys Glu Val
 1 5 10 15
 Glu Gln Arg Ile Arg Ser Leu Tyr Asp Ala Val Thr Ala Glu Asn Ile
 20 25 30
 Cys Arg Trp Leu Ser Asn Asp Cys Thr Gln Gln Asp Ala Lys Thr Ile
 35 40 45

Leu Gly Trp Leu Asp Thr Asp Pro Ala Gln Leu Glu Asp Leu Phe Gly
 50 55 60
 Ala Thr Leu Thr Phe Gly Thr Gly Gly Leu Arg Ser Leu Met Gly Ile
 65 70 75 80
 Gly Thr Asn Arg Ile Asn Leu Phe Thr Ile Arg Arg Thr Thr Gln Gly
 85 90 95
 Leu Val Gln Val Leu Arg Ala His Leu Pro His Pro Gly Asp Pro Met
 100 105 110
 Arg Val Val Val Gly Cys Asp Thr Arg His Asn Ser Ile Glu Phe Ala
 115 120 125
 Gln Glu Thr Ala Lys Val Leu Ala Gly Asn Gly Cys Glu Val Phe Leu
 130 135 140
 Phe Gln Tyr Pro Glu Pro Leu Ala Leu Val Ser Phe Thr Val Arg Tyr
 145 150 155 160
 Glu Arg Ala Ile Gly Gly Val Met Ile Thr Ala Ser His Asn Pro Pro
 165 170 175
 Asn Tyr Asn Gly Tyr Lys Val Tyr Met Ala Ser Gly Gly Gln Val Leu
 180 185 190
 Pro Pro Leu Asp Gln Glu Ile Val Ala Ala Cys Ser Ala Val Asn Glu
 195 200 205
 Ile Leu Ser Val Pro Ser Ile Asp His Pro Asn Ile His Leu Ile Gly
 210 215 220
 Lys Glu Tyr Glu Ala Leu Tyr Arg Asp Thr Leu Lys Gln Leu Gln Leu
 225 230 235 240
 Tyr Pro Glu Ala Asn Arg Ile Ser Gly Arg Ser Leu Ser Ile Ser Tyr
 245 250 255
 Ser Pro Leu His Gly Thr Gly Ile Ser Leu Val Pro His Val Leu Lys
 260 265 270
 Asp Trp Gly Phe Leu Ser Val His Leu Val Glu Lys Gln Ala Ile Gly
 275 280 285
 Asp Gly Asp Phe Pro Thr Val Gln Leu Pro Asn Pro Glu Asp Pro Glu
 290 295 300
 Ala Leu Thr Leu Gly Thr Glu Gln Met Leu Ala Asn Asp Asp Asp Leu
 305 310 315 320
 Phe Ile Ala Thr Asp Pro Asp Ala Asp Arg Val Gly Val Val Cys Leu
 325 330 335
 Glu Asp Gly Gln Pro Tyr Arg Phe Asn Gly Asn Gln Met Ala Ser Leu
 340 345 350
 Leu Ala Asp His Ile Leu Gly Ala Trp Ser Lys Thr Arg His Leu Gly
 355 360 365
 Glu His Asp Lys Leu Val Lys Ser Leu Val Thr Thr Glu Met Leu Ser
 370 375 380
 Ala Ile Ala Lys His Tyr His Val Asp Leu Ile Asn Val Gly Thr Gly
 385 390 395 400
 Phe Lys Tyr Ile Gly Glu Lys Ile Glu Ser Trp Arg Asn Ser Thr Asn
 405 410 415
 Lys Phe Val Phe Gly Ala Glu Glu Ser Tyr Gly Cys Leu Tyr Gly Thr
 420 425 430
 His Val Glu Asp Lys Asp Ala Ile Ile Ala Ser Ala Leu Ile Ala Glu
 435 440 445
 Ala Ala Leu Gln Gln Lys Leu Gln Gly Lys Thr Leu Cys Asp Ala Leu
 450 455 460
 Leu Ser Leu Tyr Glu Thr Tyr Gly Tyr Phe Ala Asn Lys Thr Glu Ser
 465 470 475 480
 Val Val Phe Ser Ala Lys Thr Asp Glu Gln Glu Ile Arg Lys Lys Leu
 485 490 495
 Ser His Leu Glu Glu Ile Ser Ser Ala Asn Phe Phe Ser Gly Lys Tyr
 500 505 510
 Gln Val Glu Lys Phe Glu Asn Tyr Lys Gln Gly Ile Gly Phe Asn Leu
 515 520 525
 Leu Ser Lys Asp Ser Tyr Ala Leu Thr Leu Pro Lys Thr Ser Met Leu
 530 535 540
 Cys Tyr Tyr Phe Ser Gly Gly Gly Arg Val Ile Ile Arg Pro Ser Gly
 545 550 555 560

Thr Glu Pro Lys Ile Lys Phe Tyr Phe Glu Met Ser Thr His Tyr Pro
 565 570 575
 Glu Arg Val Thr Asp Lys Glu Ile Gln Lys His Val Lys Gln Arg Val
 580 585 590
 Phe Asn Ile
 595

<210>75

<211>214

<212>PRT

<213>Chlamydia pneumoniae

<400>75

Ile Leu Lys Arg Tyr Val Val Met Ser Phe Val Pro Tyr Ser Leu Pro
 1 5 10 15
 Glu Leu Pro Tyr Asp Tyr Asp Ala Leu Glu Pro Val Ile Ser Ser Glu
 20 25 30
 Ile Met Ile Leu His His Gln Lys His His Gln Ile Tyr Ile Asn Asn
 35 40 45
 Leu Asn Ala Ala Leu Lys Arg Leu Asp Ala Ala Glu Thr Gln Gln Asn
 50 55 60
 Leu Asn Glu Leu Ile Ala Leu Glu Pro Ala Leu Arg Phe Asn Gly Gly
 65 70 75 80
 Gly His Ile Asn His Ser Leu Phe Trp Glu Thr Leu Ala Pro Ile Asp
 85 90 95
 Gln Gly Gly Gly Gln Pro Pro Asn His Glu Leu Leu Ser Leu Ile Glu
 100 105 110
 Arg Phe Trp Gly Thr Met Asp Asn Phe Leu Lys Lys Leu Ile Glu Val
 115 120 125
 Ala Ala Gly Val Gln Gly Ser Gly Trp Ala Trp Leu Gly Phe Cys Pro
 130 135 140
 Ala Lys Gln Glu Leu Val Leu Gln Ala Thr Ala Asn Gln Asp Pro Leu
 145 150 155 160
 Glu Pro Leu Thr Gly Lys Leu Pro Leu Leu Gly Val Asp Val Trp Glu
 165 170 175
 His Ala Tyr Tyr Leu Gln Tyr Lys Asn Val Arg Met Asp Tyr Leu Lys
 180 185 190
 Ala Phe Pro Gln Ile Ile Asn Trp Gly His Ile Glu Asn Arg Phe Ser
 195 200 205
 Glu Ile Ile Ser Ser Lys
 210

<210>76

<211>255

<212>PRT

<213>Chlamydia pneumoniae

<400>76

Ile Arg Trp Leu Val Arg Leu Phe Ser Tyr Asp Lys Pro Lys Ile Lys
 1 5 10 15
 Val Gln Lys Ile Lys Ala Asp Gly Phe Ser Gly Trp Leu Lys Cys Asn
 20 25 30
 His Cys His Glu Met Ile His Ala Asn Glu Leu Gly Gln Asn Tyr Asn
 35 40 45
 Cys Cys Pro Lys Cys Ser Tyr His Tyr Arg Ile Thr Ala Ile Glu Arg
 50 55 60
 Val Lys Leu Leu Ala Asp Lys Asp Ser Trp Arg Pro Leu Tyr Thr Asp
 65 70 75 80
 Leu Lys Ser Gln Asp Pro Leu Glu Phe Ile Asp Thr Asp Thr Tyr Ala
 85 90 95
 Asn Arg Leu Glu Lys Ala Arg Lys Asn Thr Thr Glu Ser Glu Gly Val
 100 105 110
 Ile Val Gly Ile Cys Thr Ile Gly Leu His Pro Val Ala Leu Ala Val
 115 120 125
 Met Asp Phe Asn Phe Met Ala Gly Ser Met Gly Ala Val Val Gly Xaa
 130 135 140
 Lys Leu Thr Arg Leu Ile Glu Glu Ala Ile Glu Thr Arg Leu Pro Val
 145 150 155 160

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Ile Ile Val Ser Ala Ser Gly Gly Ala Arg Met Gln Glu Ser Val Phe
 165 170 175
 Ser Leu Met Gln Met Val Lys Thr Ser Ala Ala Leu Ala Lys Leu His
 180 185 190
 Glu Ala Gly Leu Pro Tyr Ile Ser Val Leu Thr Asn Pro Thr Ser Gly
 195 200 205
 Gly Val Thr Ala Ser Phe Ala Ala Leu Gly Asp Ile Ile Ile Ala Glu
 210 215 220
 Pro Lys Ala Leu Ile Cys Phe Ala Gly Pro Arg Val Val Ala Gln Val
 225 230 235 240
 Ile Gly Glu Asp Leu Pro Glu Gly Phe Lys Asn Leu Asn Ser Tyr
 245 250 255

<210>77

<211>90

<212>PRT

<213>Chlamydia pneumoniae

<400>77

Ile Cys Asn Ala Ile Leu Met Thr Val Phe Cys Glu Leu Asp Ser Gly
 1 5 10 15
 Gly Glu Leu Pro Glu Tyr Thr Thr Pro Gly Ala Ala Gly Ala Asp Leu
 20 25 30
 Arg Ala Asn Ile Glu Glu Pro Ile Ala Leu Leu Pro Gly Gln Arg Ala
 35 40 45
 Leu Ile Pro Thr Gly Ile Lys Ala Glu Ile Pro Glu Val Arg Ala Thr
 50 55 60
 Gly Pro Ser Ser Glu Arg Phe Gly Phe Lys Ala Arg His Tyr Cys Phe
 65 70 75 80
 Lys Phe Pro Arg Asp Tyr Arg Phe Arg Leu
 85 90

<210>78

<211>101

<212>PRT

<213>Chlamydia pneumoniae

<400>78

Ser Leu Pro Glu Ser Lys Gln Lys Phe Pro Lys Tyr Glu Leu Gln Val
 1 5 10 15
 Arg Pro Arg Ser Gly Leu Ala Leu Lys His Gly Ile Thr Val Leu Asn
 20 25 30
 Ser Pro Gly Thr Ile Asp Ser Asp Tyr Arg Gly Glu Ile Arg Val Ile
 35 40 45
 Leu Ile Asn Phe Gly Asp Ser Thr Phe Ile Ile Glu Pro Lys Met Arg
 50 55 60
 Ile Ala Gln Val Val Leu Ser Pro Val Val Gln Ala Thr Phe Val Val
 65 70 75 80
 Lys Gln Xaa Ser Leu Ala Glu Thr Ala Arg Gly Ser Gly Gly Phe Gly
 85 90 95
 His Thr Gly Ala Ser
 100

<210>79

<211>169

<212>PRT

<213>Chlamydia pneumoniae

<400>79

Val Glu Val Leu Val Ile Leu Glu Gln Ala Lys Met Pro Ser Tyr Cys
 1 5 10 15
 Gln Asn Gln Gln Asp Phe Ser Leu Phe Ser Leu Leu Ser Pro Arg Leu
 20 25 30
 Val Met Phe Leu Gly Lys His Ser Arg Asp Glu Ile Leu Gln Asp Leu
 35 40 45
 Thr Asp Leu Val Asp Ala Ala Gly Leu Leu Glu Asp Lys Gln Ala Phe
 50 55 60
 Phe Asp Ala Leu Val Arg Glu Asn Ile Met Ser Thr Gly Ile Gly
 65 70 75 80
 Met Gly Val Ala Ile Pro His Gly Lys Leu Glu Ser Cys Ser Asn Phe

85 90 95
 Phe Ile Ala Ile Gly Ile His Thr Gln Gly Ile Leu Trp Asp Ala Ile
 100 105 110
 Asp Gly Ala Leu Val Arg Leu Val Phe Leu Ile Gly Gly Pro Glu Asn
 115 120 125
 Ala Gln Ala Glu Tyr Leu Lys Leu Leu Ser Thr Leu Thr Leu Ser Leu
 130 135 140
 Arg Glu Glu Ser Arg Arg Gln Gln Leu Leu Gln Val Asn Thr Ile Glu
 145 150 155 160
 Glu Val Met Asn Val Phe Val Gly Met
 165

<210>80

<211>225

<212>PRT

<213>Chlamydia pneumoniae

<400>80

Met Asp Leu Lys Leu Asp Glu Val Ala Ser Leu Leu Asp Val Ser Glu
 1 5 10 15
 His Thr Val Leu Gln Trp Leu Lys Glu Gly Ala Ile Pro Ser Tyr Ser
 20 25 30
 Met Asn Asn Glu Tyr Arg Phe Ser Arg Glu Glu Ile Glu Asp Trp Leu
 35 40 45
 Leu His Asn Gln Ala Leu Met Ile Gln Glu Arg Gly Glu Asp Lys Glu
 50 55 60
 Ala Leu Lys Asp Leu Ser Leu Lys Tyr Ser Leu Tyr Lys Ala Ile His
 65 70 75 80
 Arg Gly Gly Val Leu Cys Asp Val Val Val His Ser Lys Glu Glu Ala
 85 90 95
 Leu Gln Tyr Ala Ser Lys Tyr Ile Ala Gln Lys Phe Gln Leu Asp Glu
 100 105 110
 Ser Val Leu Phe Glu Met Leu Ser His Arg Glu Asn Leu Met Ser Thr
 115 120 125
 Gly Ile Gly Glu Gly Ile Ala Leu Pro His Ala Lys Asp Phe Leu Ile
 130 135 140
 Asn Ala Tyr Tyr Asp Ile Val Val Pro Met Phe Leu Ala Glu Pro Ile
 145 150 155 160
 Glu Tyr Gly Ala Leu Asp Gly Lys Pro Val Gly Ile Leu Phe Phe Leu
 165 170 175
 Phe Ala Cys Gln Asp Lys Ser His Leu Asn Leu Val Asn Lys Ile Val
 180 185 190
 His Leu Gly Met Ser Leu Asn Ala Arg Ser Phe Phe Lys Asn Tyr Pro
 195 200 205
 Asn Lys Asp Gln Leu Leu Ala Tyr Val Lys Glu Trp Glu Ser Gln Thr
 210 215 220
 His
 225

<210>81

<211>480

<212>PRT

<213>Chlamydia pneumoniae

<400>81

Lys Lys Ser Phe Cys Cys Tyr Gly Asp Pro His Arg Leu Pro Gly Asp
 1 5 10 15
 Cys Ser Arg Met Met Ser Ser Lys Arg Thr Ser Lys Ile Ala Val Leu
 20 25 30
 Ser Ile Leu Leu Thr Phe Thr His Ser Ile Gly Phe Ala Asn Ala Asn
 35 40 45
 Ser Ser Val Gly Leu Gly Thr Val Tyr Ile Thr Ser Glu Val Val Lys
 50 55 60
 Lys Pro Gln Lys Gly Ser Glu Arg Lys Gln Ala Lys Lys Glu Pro Arg
 65 70 75 80
 Ala Arg Lys Gly Tyr Leu Val Pro Ser Ser Arg Thr Leu Ser Ala Arg
 85 90 95
 Ala Gln Lys Met Lys Asn Ser Ser Arg Lys Glu Ser Ser Gly Gly Cys

100 105 110
 Asn Glu Ile Ser Ala Asn Ser Thr Pro Arg Ser Val Lys Leu Arg Arg
 115 120 125
 Asn Lys Arg Ala Glu Gln Lys Ala Ala Lys Gln Gly Phe Ser Ala Phe
 130 135 140
 Ser Asn Leu Thr Leu Lys Ser Leu Leu Pro Lys Leu Pro Ser Lys Gln
 145 150 155 160
 Lys Thr Ser Ile His Glu Arg Glu Lys Ala Thr Ser Arg Phe Val Asn
 165 170 175
 Glu Ser Gln Leu Ser Ser Ala Arg Lys Arg Tyr Cys Thr Pro Ser Ser
 180 185 190
 Ala Ala Pro Ser Leu Phe Leu Glu Thr Glu Ile Val Arg Ala Pro Val
 195 200 205
 Glu Arg Thr Lys Glu Leu Gln Asp Asn Glu Ile His Ile Pro Val Val
 210 215 220
 Gln Val Gln Thr Asn Pro Lys Glu Gln Asn Thr Lys Thr Thr Lys Gln
 225 230 235 240
 Leu Ala Ser Gln Ala Ser Ile Gln Gln Ser Glu Gly Thr Glu Gln Ser
 245 250 255
 Leu Arg Glu Leu Ala Gln Gly Ala Ser Leu Pro Val Leu Val Arg Ser
 260 265 270
 Asn Pro Glu Val Ser Val Gln Arg Gln Lys Glu Glu Leu Leu Lys Glu
 275 280 285
 Leu Val Ala Glu Arg Arg Gln Cys Lys Arg Lys Ser Val Arg Gln Ala
 290 295 300
 Leu Glu Ala Arg Ser Leu Thr Lys Lys Val Ala Arg Gly Gly Ser Val
 305 310 315 320
 Thr Ser Thr Leu Arg Tyr Asp Pro Glu Lys Ala Ala Glu Ile Lys Ser
 325 330 335
 Arg Arg Asn Cys Lys Val Ser Pro Glu Ala Arg Glu Gln Lys Tyr Ser
 340 345 350
 Ser Cys Lys Arg Asp Ala Arg Ala Asn Gly Lys Gln Asp Lys Thr Thr
 355 360 365
 Pro Ser Glu Asp Ala Ser Gln Glu Glu Gln Gln Thr Gly Ala Gly Leu
 370 375 380
 Val Arg Lys Thr Pro Lys Ser Gln Val Ala Ser Asn Ala Gln Asn Phe
 385 390 395 400
 Tyr Arg Asn Ser Lys Asn Thr Asn Ile Asp Ser Tyr Leu Thr Ala Asn
 405 410 415
 Gln Tyr Ser Cys Ser Ser Glu Glu Thr Asp Trp Pro Cys Ser Ser Cys
 420 425 430
 Val Ser Lys Arg Arg Thr His Asn Ser Ile Ser Val Cys Thr Met Val
 435 440 445
 Val Thr Val Ile Ala Met Ile Val Gly Ala Leu Ile Ile Ala Asn Ala
 450 455 460
 Thr Glu Ser Gln Thr Thr Ser Asp Pro Thr Pro Pro Thr Pro Thr Pro
 465 470 475 480
 <210>82
 <211>590
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>82
 Tyr Asp Tyr Tyr Lys Tyr Asn Met Phe Phe Lys Lys Asn Tyr Met Thr
 1 5 10 15
 Asp Phe Pro Thr His Phe Lys Gly Pro Lys Leu Asn Pro Ile Lys Val
 20 25 30
 Asn Pro Asn Phe Phe Glu Arg Asn Pro Lys Val Ala Arg Val Leu Gln
 35 40 45
 Ile Thr Ala Val Val Leu Gly Ile Ile Ala Leu Leu Ser Gly Ile Val
 50 55 60
 Leu Ile Ile Gly Thr Pro Leu Gly Ala Pro Ile Ser Met Ile Leu Gly
 65 70 75 80
 Gly Cys Leu Leu Ala Ser Gly Gly Ala Leu Phe Val Gly Gly Thr Ile
 85 90 95

Ala Thr Ile Leu Gln Ala Arg Asn Ser Tyr Lys Lys Ala Val Asn Gln
 100 105 110
 Lys Lys Leu Ser Glu Pro Leu Met Glu Arg Pro Glu Leu Lys Ala Leu
 115 120 125
 Asp Tyr Ser Leu Asp Leu Lys Glu Val Trp Asp Leu His His Ser Cys
 130 135 140
 Cys Gln His Leu Lys Lys Ile Asp Leu Asn Leu Ser Glu Thr Gln Arg
 145 150 155 160
 Glu Val Leu Asn Gln Ile Lys Ile Asp Asp Glu Gly Pro Ser Leu Gly
 165 170 175
 Glu Cys Ala Ala Met Ile Ser Glu Asn Tyr Asp Ala Cys Leu Lys Met
 180 185 190
 Leu Ala Tyr Arg Glu Glu Leu Leu Lys Glu Gln Thr Gln Tyr Gln Glu
 195 200 205
 Thr Arg Phe Asn Gln Asn Leu Thr His Arg Asn Lys Val Leu Leu Ser
 210 215 220
 Ile Leu Ser Arg Ile Thr Asp Asn Ile Ser Lys Ala Gly Gly Val Phe
 225 230 235 240
 Ser Leu Lys Phe Ser Thr Leu Ser Ser Arg Met Ser Arg Ile His Thr
 245 250 255
 Thr Thr Thr Val Ile Leu Ala Leu Ser Ala Val Val Ser Val Met Val
 260 265 270
 Val Ala Ala Leu Ile Pro Gly Gly Ile Leu Ala Leu Pro Ile Leu Leu
 275 280 285
 Ala Val Ala Ile Ser Ala Gly Val Ile Val Thr Gly Leu Ser Tyr Leu
 290 295 300
 Val Arg Gln Ile Leu Ser Asn Thr Lys Arg Asn Arg Gln Asp Phe Tyr
 305 310 315 320
 Lys Asp Phe Val Lys Asn Val Asp Ile Glu Leu Leu Asn Gln Thr Val
 325 330 335
 Thr Leu Gln Arg Phe Leu Phe Glu Met Leu Lys Gly Val Leu Lys Glu
 340 345 350
 Glu Glu Glu Val Ser Leu Glu Gly Gln Asp Trp Tyr Thr Gln Tyr Ile
 355 360 365
 Thr Asn Ala Pro Ile Glu Lys Arg Leu Ile Glu Glu Ile Arg Val Thr
 370 375 380
 Tyr Lys Glu Ile Asp Ala Gln Thr Lys Lys Met Lys Thr Asp Leu Glu
 385 390 395 400
 Phe Leu Glu Asn Glu Val Arg Ser Gly Arg Leu Ser Val Ala Ser Pro
 405 410 415
 Ser Glu Asp Pro Ser Glu Thr Pro Ile Phe Thr Gln Gly Lys Glu Phe
 420 425 430
 Ala Lys Leu Arg Arg Gln Thr Ser Gln Asn Ile Ser Thr Ile Tyr Gly
 435 440 445
 Pro Asp Asn Glu Asn Ile Asp Pro Glu Phe Ser Leu Pro Trp Met Pro
 450 455 460
 Lys Lys Glu Glu Glu Ile Asp His Ser Leu Glu Pro Val Thr Lys Leu
 465 470 475 480
 Glu Pro Gly Ser Arg Glu Glu Leu Leu Leu Val Glu Gly Val Asn Pro
 485 490 495
 Thr Leu Arg Glu Leu Asn Met Arg Ile Ala Leu Leu Gln Gln Gln Leu
 500 505 510
 Ser Ser Val Arg Lys Trp Arg His Pro Arg Gly Glu His Tyr Gly Asn
 515 520 525
 Val Ile Tyr Ser Asp Thr Glu Leu Asp Arg Ile Gln Met Leu Glu Gly
 530 535 540
 Ala Phe Tyr Asn His Leu Arg Glu Ala Gln Glu Ile Thr Gln Ser
 545 550 555 560
 Leu Gly Asp Leu Val Asp Ile Gln Asn Arg Ile Leu Gly Ile Ile Val
 565 570 575
 Glu Gly Asp Ser Asp Ser Arg Thr Glu Glu Glu Pro Gln Glu
 580 585 590
 <210>83
 <211>580

<212>PRT

<213>Chlamydia pneumoniae

<400>83

Gly Val Tyr Met Ala Asn Pro Thr Gln Ser Arg Pro Pro Ser Pro Glu
 1 5 10 15
 Ile Ser Ile Glu Glu Leu Glu Leu Gln Glu Leu Ala Gly Ser Ser Asn
 20 25 30
 Thr Glu Thr Ile Ser Asn Thr Pro Pro Ser Cys Ala Ala Thr Ala
 35 40 45
 Glu Glu Val Ser Leu Phe Ile Glu Gly Gly Arg Arg Asn Ser Glu Asp
 50 55 60
 Glu Glu Gly Pro Leu Gly Ser Cys Glu Val Tyr Asp Val Val Cys Ile
 65 70 75 80
 Thr Asn Gln Gly Asp Pro Glu Val Arg Asp His Glu Val Arg Val Met
 85 90 95
 Tyr Ile Asn Gly Ser Gly Arg Thr Gln His Glu Gly Ile Leu Asp Ala
 100 105 110
 Met Asn Ile Cys Asp Leu Arg Gly Glu Pro Val Arg Phe Ile His Asn
 115 120 125
 Ser Gly Tyr Gly Leu Gly Ser Cys Phe Leu Gly Ile Arg Asn Arg Ile
 130 135 140
 Pro Pro Arg Asp Asn Val Ile Ser Gln Ala Ile Gln Ala Arg Trp Asn
 145 150 155 160
 Glu Phe Phe Ile Phe Ala Glu Asn Ala Asn Arg Asp Tyr Ile Val Leu
 165 170 175
 Phe Ser Gly Asn Gly Gly Leu Tyr Leu Gln Val Ala Leu Asp Asn Ser
 180 185 190
 Ile Tyr Ser His His Ile Leu Cys Val Gly Ile Gly Ser Ser Tyr Tyr
 195 200 205
 Ile Gln Gly Asn Tyr Arg Val His Asn Tyr Arg Val Thr Gly Asp Trp
 210 215 220
 Thr Thr Leu Leu Asp Arg Gly Ala Thr Ala Val Asn Thr Thr Thr
 225 230 235 240
 Leu Pro Tyr Ala Asp Ser Ala Glu Gly Leu Phe Leu Pro Ser Val Arg
 245 250 255
 Cys Pro Ser Tyr Gln Trp Ala Leu Arg Cys Gly Glu Gln Cys Leu Ile
 260 265 270
 Met Asp Asn Asn Gln Gln Val Gly Phe Arg Pro Gln Asp Ser Ser Ser
 275 280 285
 Glu Ile Ala Leu Val Val Asn Leu Asn Gln Asp His Ser Thr Trp Thr
 290 295 300
 Arg Leu Ile Glu Trp Ile Asp Arg Gly Asp Ser Gln Ala Val Leu Glu
 305 310 315 320
 Leu Asn Pro Gln Pro Ser His Cys Arg Asp Ile Ala Leu Thr Ala Leu
 325 330 335
 Tyr Ala Thr Thr Arg Ile Ser Ser Leu Leu Gln Glu Cys Leu Met Ile
 340 345 350
 Ser Val Thr Tyr Ala Pro Glu Val Phe Val Thr Tyr Ala Ile Val Thr
 355 360 365
 Gly Tyr Ser Ile Met Thr Leu Arg Tyr Phe Ile Leu Leu Leu Thr Asn
 370 375 380
 Arg Pro Gly Cys Arg Arg His Phe Arg Val Leu Arg Leu Ala Ala Leu
 385 390 395 400
 Gly Leu Gln Ser Leu Gly Phe Leu Thr Val Leu Leu Asp His Ile Asn
 405 410 415
 Val Thr Arg Arg Val Asn Arg Arg Pro Leu Ile Ser Val Ile Phe
 420 425 430
 Cys Thr Ala Ser Phe Ala Thr Gly Ser Phe Ile Tyr Val Asp Leu Thr
 435 440 445
 Arg Met Phe Phe Thr Ser Leu Arg Ser Arg Leu Gln Leu Phe Val Gln
 450 455 460
 Arg Arg Leu Thr Gly Arg Gly Leu Pro Leu Arg Arg Val Phe Val Asn
 465 470 475 480
 His Leu Asp Ser Leu Arg Phe Ser Gln Asn Ala Leu Ile Thr Phe His

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485 490 495
 Gly Gly Leu Phe Met Pro Leu Ile Ile Gly Phe Phe Asn Gln Leu Val
 500 505 510
 Ile Gln Val Pro Arg Val Val Ile Arg Pro Asn Thr Thr Ala Val Tyr
 515 520 525
 Asp Leu Asn Gln Thr Ser Gln Glu Ala Trp Asp Ser Gly Asp Val Leu
 530 535 540
 Ala Ile Gly Gln Thr Ile Asn Phe Leu Leu Cys Met Ile Leu Leu Val
 545 550 555 560
 Ile Asn Thr Phe Phe Phe Val Arg Ser Val Arg Arg Asn Leu His Arg
 565 570 575
 Arg Pro His Arg
 580

<210>84

<211>264

<212>PRT

<213>Chlamydia pneumoniae

<400>84

Lys Gly Ser Gly Tyr Ser Tyr Arg Gly Pro Pro Met Ala Val Glu Gly
 1 5 10 15
 Arg Val Asn Ser Ser Gln Ala Leu Asn Gln Asp Cys Gln Glu Val Leu
 20 25 30
 Ala Asn Lys Gln Ser Lys Gly Leu Leu Arg Cys Arg Ile Leu Ser Ile
 35 40 45
 Val Val Ala Val Ile Thr Phe Ile Ala Gly Val Val Leu Ile Ala Leu
 50 55 60
 Thr Leu Ala Ser Ile Leu Thr Ser Val Pro Tyr Leu Ala Leu Gly Val
 65 70 75 80
 Phe Leu Leu Ile Val Thr Leu Gly Cys Ile Ile Phe Ala Leu Cys Ser
 85 90 95
 Glu Lys Ile Lys Lys Val Pro Pro Thr Pro Ile Ser His Lys Glu Glu
 100 105 110
 Ile Ile Ala Trp Phe Glu Glu Arg Lys Asn Ile Asp Met Glu Lys Glu
 115 120 125
 Lys Glu Asp Pro Glu His Phe Gly Arg Thr Ala Thr Asp Ile Pro Met
 130 135 140
 Arg Ser Ala Leu Asp Gln Phe Asn His Ser Cys His His Ile His Glu
 145 150 155 160
 Ser Pro Ala Leu Thr Glu Thr Tyr Arg Ser His Gln Asp Val Leu Leu
 165 170 175
 Phe Lys Asp Trp Cys Pro Val Thr Leu Pro Asp Val Thr Ser Glu Glu
 180 185 190
 Glu Val Leu Ile Arg Ser Val Val Gly Ser Tyr Leu Leu Met Glu Ala
 195 200 205
 Cys Val Pro Lys Val Ser Met Leu Ile Asp Glu Leu His Asn Lys Leu
 210 215 220
 Xaa Ser Pro Ser Glu Arg Glu Cys Leu Phe Ile Asp Lys Lys Thr Leu
 225 230 235 240
 Gln Arg Lys Ala Ser Phe Leu Phe Thr Gln Lys Asp Leu Ala Thr Phe
 245 250 255
 Phe Leu Asp Leu Tyr Ala Gly Glu
 260

<210>85

<211>193

<212>PRT

<213>Chlamydia pneumoniae

<400>85

Ser Phe Met Ile Lys Lys Phe Phe Ile Tyr Ser Leu Ile Phe Ser Cys
 1 5 10 15
 Ser Phe Ser Ala Pro Leu Lys Gly Ile Cys Asn Glu Asp Val Ser Ser
 20 25 30
 Gln Ser Arg Ile Glu Glu Asp Pro Glu Val Leu Ile Thr Gln Leu Asn
 35 40 45
 Glu Leu Ile Glu Thr Pro Ile Glu Glu Gly Lys Glu Ile Arg Asn Glu

50 55 60
 Leu Gln Ala Ile Ser Asp Gly Gln Lys Ser Ser Glu Glu Ile Glu Glu
 65 70 75 80
 Ser Cys Gly Thr Ser Asp Ser Glu Gly Leu Ser Glu Lys Thr Asp Lys
 85 90 95
 Glu Ser Ser Asn Glu Tyr Val Leu Asp Phe Phe Asp Ser Met Val Gln
 100 105 110
 Arg Leu Glu Gly Ile Ser Lys Met Cys Gln Ser Gly Gln Val Ala Gln
 115 120 125
 Ile Ile Asp Cys Phe Asn Arg Glu Phe Asp Ile Arg Asn Arg Glu Leu
 130 135 140
 Glu Leu Lys Asn Arg Glu Leu Glu Leu Arg Glu Lys Asp Leu Glu Phe
 145 150 155 160
 Lys Lys Ser Ile Leu Asp Trp Asn Lys Glu Lys Val Ser Arg Glu Leu
 165 170 175
 Ala Phe Gln Arg Glu Gln Asp Ile Lys Gln Thr Leu Met Leu Leu Lys
 180 185 190
 Lys

<210>86

<211>297

<212>PRT

<213>Chlamydia pneumoniae

<400>86

Asn Phe Lys Ile Trp Gly Ile Arg Ile Thr Ile Ala Val Glu Leu Pro
 1 5 10 15
 Pro Pro Glu Val Gly Gly Glu Leu Pro Pro Tyr Phe Ser Ala Ser Asn
 20 25 30
 Phe Val Val Ile Glu Arg Gly Ala Pro Ser Leu Pro Ser Pro Gln Gln
 35 40 45
 Leu Leu Ser Leu Pro Glu Tyr Ser Arg Gln Pro Pro Pro Gly Tyr Phe
 50 55 60
 Asp Glu Thr Ala Ser Ile Thr Ser Arg Thr Ser Glu Glu Met Phe Gly
 65 70 75 80
 Thr Leu Val Ser Thr Leu Cys Cys Pro Ala Asn Ser Glu Arg Asp Trp
 85 90 95
 Glu Asp His Glu Val Asn Cys Ile Tyr Ile Ala Ser Thr Ser Asp Thr
 100 105 110
 Gln Leu Glu Ala Val Gln Gly Gly Met His Ile Thr Glu Leu Arg Gly
 115 120 125
 Glu Pro Val Arg Val Leu Tyr Glu Thr Gly His Leu Tyr Ala Phe Ala
 130 135 140
 Arg Glu Asn Thr Cys His Ser Arg Leu Glu Val Ser His Thr Val Arg
 145 150 155 160
 Ala Met Thr Tyr Phe Trp Asp Arg Phe Phe Ser Arg His Trp Asn Val
 165 170 175
 Gly Arg Arg Phe Leu Val Phe Tyr Gln Gly Asn Gly Gly Ala Tyr Val
 180 185 190
 Gln Ala Ala Leu Asp Ser Ser Met His Thr Gln Asp Ile Tyr Val Leu
 195 200 205
 Gly Leu Ser Pro Thr Val Tyr Ile Arg Gly Asn Tyr His Val Gln His
 210 215 220
 Tyr Arg Val Arg Gly Phe Trp Pro Ser Cys Leu Asp Ser Leu Ala Ala
 225 230 235 240
 Cys Ala Glu Asn Thr Ser Val Leu Pro Thr Gly Asn Arg Val Thr Glu
 245 250 255
 Ser Phe Thr Pro Leu Tyr Ser Ala Thr His Leu Ile Thr Arg Tyr Gly
 260 265 270
 Met Val Arg Asp Ala Cys Trp Phe Val Leu Arg Ala Trp Glu Cys Phe
 275 280 285
 Gln Lys Arg Asn Asn Lys His Leu Leu
 290 295

<210>87

<211>380

<212>PRT

<213>Chlamydia pneumoniae

<400>87

Arg Glu Leu Ser Arg Thr Ala Leu Pro Cys Ser Arg Ile Leu Ala Leu
 1 5 10 15
 Leu Pro Gly Phe Ser Ser Gly Leu Cys Gly Lys Tyr Ile Ser Thr Ser
 20 25 30
 Tyr Gly Glu Ser Ser Asp Gly Ile Phe Tyr Pro Ser Leu Phe Ser His
 35 40 45
 Thr Phe Asp Asn Ala Ile Arg Tyr Gly Glu Arg Cys Leu Leu Val Cys
 50 55 60
 Ser Glu Gly Met Gly Met Leu Pro Glu Thr Gln Gln Gln Thr Ser Pro
 65 70 75 80
 Leu Thr Ser Leu Glu Gly Gly His Glu Val Ala Leu Val Leu Asn Pro
 85 90 95
 Gln Gln Asn Pro Glu Ala Leu Ser Ile Ala Ser Arg Leu Met His Glu
 100 105 110
 Glu Arg Gly Gly Arg Leu Glu Ser Asn Tyr Met Pro Gly Arg Ser Ser
 115 120 125
 Asn Pro Phe Met Thr Ser Met Tyr Val Leu Val Arg Leu Asn Thr Leu
 130 135 140
 Ala Gln Ile Tyr Leu Met Ser Pro Tyr Tyr Ser Phe Gln Ser Asn Asp
 145 150 155 160
 Ile Val Cys Leu Ile Phe Ile Ser Ser Ala Ala Val Glu Thr Val Ser
 165 170 175
 Tyr Ile Phe Leu Thr Val Thr Asp Ser Thr Cys Gly Arg Arg Tyr Leu
 180 185 190
 Arg Val Pro Arg Leu Val Cys Thr Gly Leu Arg Asn Leu Ala Leu Pro
 195 200 205
 Thr Thr Leu Leu Glu Leu Leu Ile Leu Ser Tyr Pro Arg Ser Val Glu
 210 215 220
 Gly Val Pro Phe Asn Val Arg Phe Ile Leu Gly Tyr Met Cys Thr Thr
 225 230 235 240
 Arg Val Val Phe Phe Ala Trp Asn Leu Ile Leu His Trp Pro Phe Arg
 245 250 255
 Cys Leu Arg His Gly Ile Gln Leu Phe Val His Arg Ser Ile Ile Gly
 260 265 270
 His Thr Leu Gly Ala Arg Ile Thr Asp Leu Thr Leu Ala Ser Met Arg
 275 280 285
 Tyr Ala Ile Val Phe Pro Ser Ile Val Ser Ser Cys Leu Leu Thr Ala
 290 295 300
 Leu Ala His Ala Asn Thr Asn Ile Leu Ala Leu Asp Pro Tyr Arg Leu
 305 310 315 320
 Ile Glu Ser Gly Asp Leu Arg Arg Pro Ala Phe Asn Asp Asp Glu Met
 325 330 335
 Gln Gln Ala Asp Asn Pro Trp Asp Ala Tyr Ser Ile Gly Leu Val Ile
 340 345 350
 Asn Thr Cys Ile Tyr Met Leu Ile Leu Phe Ala Asn Leu Ile Phe Met
 355 360 365
 Val Tyr Ser Val Arg Arg Tyr His Arg Ser Arg Arg
 370 375 380

<210>88

<211>156

<212>PRT

<213>Chlamydia pneumoniae

<400>88

Ile Lys Ser Leu Arg Ser Ile Leu Glu Phe Ile Cys Pro Leu Gln His
 1 5 10 15
 Ala Arg Cys Leu Lys Lys Gln His Lys Ile Ile Glu Glu Leu Phe Pro
 20 25 30
 Glu Pro Phe Gln Lys Asp His Leu Tyr Leu Lys Leu Met Glu Asn Ser
 35 40 45
 Ser Ser Arg Asp Ala Phe Asp Lys Lys Arg Met Leu Lys Glu Asn Leu
 50 55 60

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Val Val Gly Cys Gln Ser Asp Leu Tyr Leu Tyr Glu Val Tyr Gln Asp
 65 70 75 80
 Gly Ile Leu Phe Phe Phe Thr Tyr Thr Lys Ala Leu Val Ser Ser Gly
 85 90 95
 Ile Ala Ser Leu Phe Thr Glu Val Tyr Ser Gly Glu Thr Pro Ser Thr
 100 105 110
 Ile Leu Thr Cys Lys Pro Ile Phe Phe Gln Arg Leu Thr Pro Tyr Leu
 115 120 125
 Ser Phe Gly Arg Leu Asn Gly Gly Glu Ser Leu Tyr Met Arg Met Lys
 130 135 140
 Gln Ile Ala Val Gln Tyr Leu Lys Pro Pro Gln Thr
 145 150 155
 <210>89
 <211>345
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>89
 Cys Leu Leu Phe Tyr Phe Phe His Tyr Arg Met Ser Thr Pro Leu Ser
 1 5 10 15
 Ser Gly Gly Ile Ser Pro Ser Asp Gln Tyr Val Pro Gln Glu Leu Phe
 20 25 30
 Cys Asp Arg Leu Ser Ser Ser Arg Ser Asn Ser Pro Asp Ser Asn Ala
 35 40 45
 Ser Gly Asp Ser Pro Ile Val Ser Pro Pro Ile Ser Ala Leu Val Ala
 50 55 60
 Leu Thr Asp Leu Lys Leu Val Pro Tyr Asn Gln Asn Ser Phe Ser Trp
 65 70 75 80
 Thr Thr Arg Leu Lys Asn Ala Val Glu Lys Ile Gly Leu Phe Leu Gln
 85 90 95
 Arg Asn Trp Lys Tyr Ile Leu Leu Tyr Ile Leu Ala Trp Ala Leu Ile
 100 105 110
 Leu Val Cys His His Thr Val Ala Leu Thr Leu Thr Ile Trp Leu Gly
 115 120 125
 Val Gly Leu Gly Ile Gly Val Val Phe Gly Ile Phe Thr Ala Thr Cys
 130 135 140
 Leu Asp Lys Glu Asn Lys His Arg His Val Asn Ser Leu Trp Asn Leu
 145 150 155 160
 Ile Asn His Gly Ile Leu Gln Leu Asp Pro Asn Gly Thr Arg Gln Ile
 165 170 175
 Leu Leu Ala Thr Met Ile Ala Ser Ile Ser Ala Leu Ile Tyr Ala Val
 180 185 190
 Pro Gln Ala Val Gly Leu Val Ile Gly Phe Ser Ile Gly Asn Gln Leu
 195 200 205
 Ser Ile Asn Thr Val Tyr Gly Ala Arg Leu Gly Asp Glu Ala Thr Tyr
 210 215 220
 Ala Ile Asp Arg Lys Ala His Lys Lys Arg Ile Glu Asn Ile Glu Gln
 225 230 235 240
 Ala Ile Asn Gln His Gln Ile Ile Lys His Gln Met Ile Asn Gln Lys
 245 250 255
 Gln Leu Asn Ala Leu Ile Glu Ile Asn Arg Asn Asn Gln Thr Asp Pro
 260 265 270
 Ala Thr Ala Asn Leu Leu Ala Ser Leu Lys Leu Asn Leu Asn Gln Pro
 275 280 285
 Met Pro Tyr Cys Phe Ser Met Pro Glu Cys Gly Val Thr Ser Ser Tyr
 290 295 300
 Leu Asp Leu Asn Asn Asn Ser Pro Asp Asp Ile Ile Ala Arg Ala Asp
 305 310 315 320
 Gln Cys Ile Met Thr Leu Ser Gln Thr Leu Gln Gln Ile Lys Lys Glu
 325 330 335
 Pro Asp Arg Ile Ile Glu Ser Asn His
 340 345
 <210>90
 <211>394
 <212>PRT

<213>Chlamydia pneumoniae

<400>90

Met Ser Lys Glu Thr Phe Gln Arg Asn Lys Pro His Ile Asn Ile Gly
 1 5 10 15
 Thr Ile Gly His Val Asp His Gly Lys Thr Thr Leu Thr Ala Ala Ile
 20 25 30
 Thr Arg Ala Leu Ser Gly Asp Gly Leu Ala Ser Phe Arg Asp Tyr Ser
 35 40 45
 Ser Ile Asp Asn Thr Pro Glu Glu Lys Ala Arg Gly Ile Thr Ile Asn
 50 55 60
 Ala Ser His Val Glu Tyr Glu Thr Pro Asn Arg His Tyr Ala His Val
 65 70 75 80
 Asp Cys Pro Gly His Ala Asp Tyr Val Lys Asn Met Ile Thr Gly Ala
 85 90 95
 Ala Gln Met Asp Gly Ala Ile Leu Val Val Ser Ala Thr Asp Gly Ala
 100 105 110
 Met Pro Gln Thr Lys Glu His Ile Leu Leu Ala Arg Gln Val Gly Val
 115 120 125
 Pro Tyr Ile Val Val Phe Leu Asn Lys Val Asp Met Ile Ser Gln Glu
 130 135 140
 Asp Ala Glu Leu Ile Asp Leu Val Glu Met Glu Leu Ser Glu Leu Leu
 145 150 155 160
 Glu Glu Lys Gly Tyr Lys Gly Cys Pro Ile Ile Arg Gly Ser Ala Leu
 165 170 175
 Lys Ala Leu Glu Gly Asp Ala Asn Tyr Ile Glu Lys Val Arg Glu Leu
 180 185 190
 Met Gln Ala Val Asp Asp Xaa Ile Pro Thr Pro Glu Arg Glu Ile Asp
 195 200 205
 Lys Pro Phe Leu Met Pro Ile Glu Asp Val Phe Ser Ile Ser Gly Arg
 210 215 220
 Gly Thr Val Val Thr Gly Arg Ile Glu Arg Gly Ile Val Lys Val Ser
 225 230 235 240
 Asp Lys Val Gln Leu Val Gly Leu Gly Glu Thr Lys Glu Thr Ile Val
 245 250 255
 Thr Gly Val Glu Met Phe Arg Lys Glu Leu Pro Glu Gly Arg Ala Gly
 260 265 270
 Glu Asn Val Gly Leu Leu Leu Arg Gly Ile Gly Lys Asn Asp Val Glu
 275 280 285
 Arg Gly Met Val Val Cys Gln Pro Asn Ser Val Lys Pro His Thr Lys
 290 295 300
 Phe Lys Ser Ala Val Tyr Val Leu Gln Lys Glu Gly Gly Arg His
 305 310 315 320
 Lys Pro Phe Phe Ser Gly Tyr Arg Pro Gln Phe Phe Phe Arg Thr Thr
 325 330 335
 Asp Val Thr Gly Val Val Thr Leu Pro Glu Gly Thr Glu Met Val Met
 340 345 350
 Pro Gly Asp Asn Val Glu Leu Asp Val Glu Leu Ile Gly Thr Val Ala
 355 360 365
 Leu Glu Glu Gly Met Arg Phe Ala Ile Arg Glu Gly Gly Arg Thr Ile
 370 375 380
 Gly Ala Gly Thr Ile Ser Lys Ile Asn Ala
 385 390

<210>91

<211>88

<212>PRT

<213>Chlamydia pneumoniae

<400>91

Ser Arg Ser Trp Phe Met Lys Gln Gln His Asn Arg Lys Ala Leu Ser
 1 5 10 15
 Arg Lys Ile Gly Thr Val Lys Lys Gln Ala Lys Phe Ala Gly Ser Phe
 20 25 30
 Leu Asp Glu Ile Lys Lys Ile Glu Trp Val Ser Lys His Asp Leu Lys
 35 40 45
 Lys Tyr Ile Lys Val Val Leu Ile Ser Ile Phe Gly Phe Gly Phe Ala

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50 55 60
 Ile Tyr Phe Val Asp Leu Val Leu Arg Lys Ser Ile Thr Cys Leu Asp
 65 70 75 80
 Gly Ile Thr Thr Phe Leu Phe Gly
 85

<210>92

<211>190

<212>PRT

<213>Chlamydia pneumoniae

<400>92

Gln Pro Phe Cys Ser Val Asn Cys Met Tyr Lys Trp Tyr Val Val Gln
 1 5 10 15
 Val Phe Thr Ala Gln Glu Lys Lys Val Lys Lys Ala Leu Glu Asp Phe
 20 25 30
 Lys Glu Ser Ser Gly Met Thr Asp Phe Ile Gln Glu Ile Ile Leu Pro
 35 40 45
 Ile Glu Asn Val Met Glu Val Lys Lys Gly Glu His Lys Val Val Glu
 50 55 60
 Lys Tyr Ile Trp Pro Gly Tyr Leu Leu Val Lys Met His Leu Thr Asp
 65 70 75 80
 Glu Ser Trp Leu Tyr Val Lys Ser Thr Ala Gly Ile Val Glu Phe Leu
 85 90 95
 Gly Gly Gly Val Pro Val Ala Leu Ser Glu Asp Glu Val Arg Ser Ile
 100 105 110
 Leu Thr Asp Ile Glu Glu Lys Lys Ser Gly Val Val Gln Lys His Gln
 115 120 125
 Phe Glu Val Gly Ser Arg Val Lys Ile Asn Asp Gly Val Phe Val Asn
 130 135 140
 Phe Ile Gly Thr Val Ser Glu Val Phe His Asp Lys Gly Arg Leu Ser
 145 150 155 160
 Val Met Val Ser Ile Phe Gly Arg Glu Thr Arg Val Asp Asp Leu Glu
 165 170 175
 Phe Trp Gln Val Glu Glu Val Ala Pro Gly Gln Glu Ser Glu
 180 185 190

<210>93

<211>150

<212>PRT

<213>Chlamydia pneumoniae

<400>93

Val Ser Gln Cys Lys Val Arg Phe Ser Met Ser Val Lys Lys Val Ile
 1 5 10 15
 Lys Ile Ile Lys Leu Gln Ile Pro Gly Gly Lys Ala Asn Pro Ala Pro
 20 25 30
 Pro Ile Gly Pro Ala Leu Gly Ala Ala Gly Val Asn Ile Met Gly Phe
 35 40 45
 Cys Lys Glu Phe Asn Ala Ala Thr Gln Asp Lys Pro Gly Asp Leu Leu
 50 55 60
 Pro Val Val Ile Thr Val Tyr Ala Asp Lys Thr Phe Thr Phe Ile Thr
 65 70 75 80
 Lys Gln Pro Pro Val Ser Ser Leu Ile Lys Lys Thr Leu Asn Leu Glu
 85 90 95
 Ser Gly Ser Lys Ile Pro Asn Arg Asn Lys Val Gly Lys Leu Thr Gln
 100 105 110
 Ala Gln Val Glu Ala Ile Ala Glu Gln Lys Met Lys Asp Met Asp Ile
 115 120 125
 Val Leu Leu Glu Ser Ala Lys Arg Met Val Glu Gly Thr Ala Arg Ser
 130 135 140
 Met Gly Ile Asp Val Glu
 145 150

<210>94

<211>232

<212>PRT

<213>Chlamydia pneumoniae

<400>94

WO 99/27105

PCT/IB98/01890

Met Thr Lys His Gly Lys Arg Ile Arg Gly Ile Leu Lys Asn Tyr Asp
 1 5 10 15
 Phe Ser Lys Ser Tyr Ser Leu Arg Glu Ala Ile Asp Ile Leu Lys Gln
 20 25 30
 Cys Pro Pro Val Arg Phe Asp Gln Thr Val Asp Val Ser Ile Lys Leu
 35 40 45
 Gly Ile Asp Pro Lys Lys Ser Asp Gln Gln Ile Arg Gly Ala Val Phe
 50 55 60
 Leu Pro Asn Gly Thr Gly Lys Thr Leu Arg Ile Leu Val Phe Ala Ser
 65 70 75 80
 Gly Asn Lys Val Lys Glu Ala Val Glu Ala Gly Ala Asp Phe Met Gly
 85 90 95
 Ser Asp Asp Leu Val Glu Lys Ile Lys Ser Gly Trp Leu Glu Phe Asp
 100 105 110
 Val Ala Val Ala Thr Pro Asp Met Met Arg Glu Val Gly Lys Leu Gly
 115 120 125
 Lys Val Leu Gly Pro Arg Asn Leu Met Pro Thr Pro Lys Thr Gly Thr
 130 135 140
 Val Thr Thr Asp Val Ala Lys Ala Ile Ser Glu Leu Arg Lys Gly Lys
 145 150 155 160
 Ile Glu Phe Lys Ala Asp Arg Ala Gly Val Cys Asn Val Gly Val Gly
 165 170 175
 Lys Leu Ser Phe Glu Ser Ser Gln Ile Lys Glu Asn Ile Glu Ala Leu
 180 185 190
 Ser Ser Ala Leu Ile Lys Ala Lys Pro Pro Ala Ala Lys Gly Gln Tyr
 195 200 205
 Leu Val Ser Phe Thr Ile Ser Ser Thr Met Gly Pro Gly Ile Ser Ile
 210 215 220
 Asp Thr Arg Glu Leu Met Ala Ser
 225 230

<210>95

<211>170

<212>PRT

<213>Chlamydia pneumoniae

<400>95

Met Lys Gln Glu Lys Thr Leu Leu Leu Gln Glu Val Glu Asp Lys Ile
 1 5 10 15
 Ser Ala Ala Gln Gly Phe Ile Leu Leu Arg Tyr Leu Arg Phe Thr Ala
 20 25 30
 Ala Tyr Ser Arg Glu Phe Arg Asn Ser Leu Ser Gly Val Ser Ala Glu
 35 40 45
 Phe Glu Val Leu Lys Lys Arg Ile Phe Phe Lys Ala Ile Glu Ala Ala
 50 55 60
 Gly Leu Glu Val Asp Cys Ser Asp Thr Asp Gly His Leu Gly Val Val
 65 70 75 80
 Phe Ser Cys Gly Asp Pro Val Ser Ala Ala Lys Gln Val Leu Asp Phe
 85 90 95
 Asn Lys Gln His Lys Asp Ser Leu Val Phe Leu Ala Gly Arg Met Asp
 100 105 110
 Asn Ala Ser Leu Ser Gly Ala Glu Val Glu Ala Val Ala Lys Leu Pro
 115 120 125
 Ser Leu Lys Glu Leu Arg Gln Gln Val Val Gly Leu Phe Ala Ala Pro
 130 135 140
 Met Ser Gln Val Val Gly Ile Met Asn Ser Val Leu Ser Gly Val Ile
 145 150 155 160
 Ser Cys Val Asp Gln Lys Ala Gly Lys Asn
 165 170

<210>96

<211>132

<212>PRT

<213>Chlamydia pneumoniae

<400>96

Val Thr Lys Val Thr Thr Glu Ser Leu Glu Thr Leu Val Glu Lys Leu
 1 5 10 15

WO 99/27105

PCT/IB98/01890

Ser Asn Leu Thr Val Leu Glu Leu Ser Gln Leu Lys Lys Leu Leu Glu
 20 25 30
 Glu Lys Trp Asp Val Thr Ala Ser Ala Pro Val Val Ala Val Ala Ala
 35 40 45
 Gly Gly Gly Gly Glu Ala Pro Val Ala Ala Glu Pro Thr Glu Phe Ala
 50 55 60
 Val Thr Leu Glu Asp Val Pro Ala Asp Lys Lys Ile Gly Val Leu Lys
 65 70 75 80
 Val Val Arg Glu Val Thr Gly Leu Ala Leu Lys Glu Ala Lys Glu Met
 85 90 95
 Thr Glu Gly Leu Pro Lys Thr Val Lys Glu Lys Thr Ser Lys Ser Asp
 100 105 110
 Ala Glu Asp Thr Val Lys Lys Leu Gln Asp Ala Gly Ala Lys Ala Ser
 115 120 125
 Phe Lys Gly Leu
 130
 <210>97
 <211>1262
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>97
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 Arg Val Ser Val Lys Lys Lys Glu Asp Ile Pro Asp Leu Pro Asn Leu
 20 25 30
 Ile Glu Ile Gln Ile Lys Ser Tyr Lys Gln Phe Leu Gln Ile Gly Lys
 35 40 45
 Leu Ala Glu Glu Arg Glu Asn Ile Gly Leu Glu Glu Val Phe Arg Glu
 50 55 60
 Ile Phe Pro Ile Lys Ser Tyr Asn Glu Ala Thr Val Leu Glu Tyr Leu
 65 70 75 80
 Ser Tyr Asn Leu Gly Val Pro Lys Tyr Ser Pro Glu Glu Cys Ile Arg
 85 90 95
 Arg Gly Ile Thr Tyr Ser Val Thr Leu Lys Val Arg Phe Arg Leu Thr
 100 105 110
 Asp Glu Thr Gly Ile Lys Glu Glu Glu Val Tyr Met Gly Thr Ile Pro
 115 120 125
 Leu Met Thr Asp Lys Gly Thr Phe Ile Ile Asn Gly Ala Glu Arg Val
 130 135 140
 Val Val Ser Gln Val His Arg Ser Pro Gly Ile Asn Phe Glu Gln Glu
 145 150 155 160
 Lys His Ser Lys Gly Asn Ile Leu Phe Ser Phe Arg Ile Ile Pro Tyr
 165 170 175
 Arg Gly Ser Trp Leu Glu Ala Ile Phe Asp Ile Asn Asp Leu Ile Tyr
 180 185 190
 Ile His Ile Asp Arg Lys Lys Arg Arg Arg Lys Ile Leu Ala Ile Thr
 195 200 205
 Phe Ile Arg Ala Leu Gly Tyr Ser Ser Asp Ala Asp Ile Ile Glu Glu
 210 215 220
 Phe Phe Thr Ile Gly Glu Ser Ser Leu Arg Ser Glu Lys Asp Phe Ala
 225 230 235 240
 Leu Leu Val Gly Arg Ile Leu Ala Asp Asn Ile Ile Asp Glu Ala Ser
 245 250 255
 Ser Leu Val Tyr Gly Lys Ala Gly Glu Lys Leu Ser Thr Ala Met Leu
 260 265 270
 Lys Arg Met Leu Asp Ala Gly Ile Ala Ser Val Lys Ile Ala Val Asp
 275 280 285
 Ala Asp Glu Asn His Pro Ile Ile Lys Met Leu Ala Lys Asp Pro Thr
 290 295 300
 Asp Ser Tyr Glu Ala Ala Leu Lys Asp Phe Tyr Arg Arg Leu Arg Pro
 305 310 315 320
 Gly Glu Pro Ala Thr Leu Ala Asn Ala Arg Ser Thr Ile Met Arg Leu
 325 330 335
 Phe Phe Asp Pro Lys Arg Tyr Asn Leu Gly Arg Val Gly Arg Tyr Lys

340 345 350
 Leu Asn Arg Lys Leu Gly Phe Ser Ile Asp Asp Glu Ala Leu Ser Gln
 355 360 365
 Val Thr Leu Arg Lys Glu Asp Val Ile Gly Ala Leu Lys Tyr Leu Ile
 370 375 380
 Arg Leu Lys Met Gly Asp Glu Lys Ala Cys Val Asp Asp Ile Asp His
 385 390 395 400
 Leu Ala Asn Arg Arg Val Arg Ser Val Gly Glu Leu Ile Gln Asn Gln
 405 410 415
 Cys Arg Ser Gly Leu Ala Arg Met Glu Lys Ile Val Arg Glu Arg Met
 420 425 430
 Asn Leu Phe Asp Phe Ser Ser Asp Thr Leu Thr Pro Gly Lys Val Val
 435 440 445
 Ser Ala Lys Gly Leu Ala Ser Val Leu Lys Asp Phe Phe Gly Arg Ser
 450 455 460
 Gln Leu Ser Gln Phe Met Asp Gln Thr Asn Pro Val Ala Glu Leu Thr
 465 470 475 480
 His Lys Arg Arg Leu Ser Ala Leu Gly Pro Gly Gly Leu Asn Arg Glu
 485 490 495
 Arg Ala Gly Phe Glu Val Arg Asp Val His Ala Ser His Tyr Gly Arg
 500 505 510
 Ile Cys Pro Ile Glu Thr Pro Glu Gly Pro Asn Ile Gly Leu Ile Thr
 515 520 525
 Ser Leu Ser Ser Phe Ala Lys Ile Asn Glu Phe Gly Phe Ile Glu Thr
 530 535 540
 Pro Tyr Arg Ile Val Arg Asp Gly Ile Val Thr Asp Glu Ile Glu Tyr
 545 550 555 560
 Met Thr Ala Asp Val Glu Glu Glu Cys Val Ile Ala Gln Ala Ser Ala
 565 570 575
 Ser Leu Asp Glu Tyr Asn Met Phe Thr Glu Pro Val Cys Trp Val Arg
 580 585 590
 Tyr Ala Gly Glu Ala Phe Glu Ala Asp Thr Ser Thr Val Thr His Met
 595 600 605
 Asp Val Ser Pro Lys Gln Leu Val Ser Ile Val Thr Gly Leu Ile Pro
 610 615 620
 Phe Leu Glu His Asp Asp Ala Asn Arg Ala Leu Met Gly Ser Asn Met
 625 630 635 640
 Gln Arg Gln Ala Val Pro Leu Leu Lys Thr Glu Ala Pro Val Val Gly
 645 650 655
 Thr Gly Leu Glu Cys Arg Ala Ala Lys Asp Ser Gly Ala Ile Val Val
 660 665 670
 Ala Glu Glu Asp Gly Val Val Asp Phe Val Asp Gly Tyr Lys Val Val
 675 680 685
 Val Ala Ala Lys His Asn Pro Thr Ile Lys Arg Thr Tyr His Leu Lys
 690 695 700
 Lys Phe Leu Arg Ser Asn Ser Gly Thr Cys Ile Asn Gln Gln Pro Leu
 705 710 715 720
 Cys Ala Val Gly Asp Val Ile Thr Lys Gly Asp Val Ile Ala Asp Gly
 725 730 735
 Pro Ala Thr Asp Arg Gly Glu Leu Ala Leu Gly Lys Asn Val Leu Val
 740 745 750
 Ala Phe Met Pro Trp Tyr Gly Tyr Asn Phe Glu Asp Ala Ile Ile Ile
 755 760 765
 Ser Glu Lys Leu Ile Arg Glu Asp Ala Tyr Thr Ser Ile Tyr Ile Glu
 770 775 780
 Glu Phe Glu Leu Thr Ala Arg Asp Thr Lys Leu Gly Lys Glu Glu Ile
 785 790 795 800
 Thr Arg Asp Ile Pro Asn Val Ser Asp Glu Val Leu Ala Asn Leu Gly
 805 810 815
 Glu Asp Gly Ile Ile Arg Ile Gly Ala Glu Val Lys Pro Gly Asp Ile
 820 825 830
 Leu Val Gly Lys Ile Thr Pro Lys Ser Glu Thr Glu Leu Ala Pro Glu
 835 840 845
 Glu Arg Leu Leu Arg Ala Ile Phe Gly Glu Lys Ala Ala Asp Val Lys

WO 99/27105

PCT/IB98/01890

850 855 860
 Asp Ala Ser Leu Thr Val Pro Pro Gly Thr Glu Gly Val Val Met Asp
 865 870 875 880
 Val Lys Val Phe Ser Arg Lys Asp Arg Leu Ser Lys Ser Asp Asp Glu
 885 890 895
 Leu Val Glu Glu Ala Val His Leu Lys Asp Leu Gln Lys Gly Tyr Lys
 900 905 910
 Asn Gln Val Ala Thr Leu Lys Thr Glu Tyr Arg Glu Lys Leu Gly Ala
 915 920 925
 Leu Leu Leu Asn Glu Lys Ala Pro Ala Ala Ile Ile His Arg Arg Thr
 930 935 940
 Ala Glu Ile Val Val His Glu Gly Leu Leu Phe Asp Gln Glu Thr Ile
 945 950 955 960
 Glu Arg Ile Glu Gln Glu Asp Leu Val Asp Leu Leu Met Pro Asn Cys
 965 970 975
 Glu Met Tyr Glu Val Leu Lys Gly Leu Leu Ser Asp Tyr Glu Thr Ala
 980 985 990
 Leu Gln Arg Leu Glu Ile Asn Tyr Lys Thr Glu Val Glu His Ile Arg
 995 1000 1005
 Glu Gly Asp Ala Asp Leu Asp His Gly Val Ile Arg Gln Val Lys Val
 1010 1015 1020
 Tyr Val Ala Ser Lys Arg Lys Leu Gln Val Gly Asp Lys Met Ala Gly
 1025 1030 1035 1040
 Arg His Gly Asn Lys Gly Val Val Ser Lys Ile Val Pro Glu Ala Asp
 1045 1050 1055
 Met Pro Tyr Leu Ser Asn Gly Glu Thr Val Gln Met Ile Leu Asn Pro
 1060 1065 1070
 Leu Gly Val Pro Ser Arg Met Asn Leu Gly Gln Val Leu Glu Thr His
 1075 1080 1085
 Leu Gly Tyr Ala Ala Lys Thr Ala Gly Ile Tyr Val Lys Thr Pro Val
 1090 1095 1100
 Phe Glu Gly Phe Pro Glu Gln Arg Ile Trp Asp Met Met Ile Glu Gln
 1105 1110 1115 1120
 Gly Leu Pro Glu Asp Gly Lys Ser Phe Leu Tyr Asp Gly Lys Thr Gly
 1125 1130 1135
 Glu Arg Phe Asp Asn Lys Val Val Ile Gly Tyr Ile Tyr Met Leu Lys
 1140 1145 1150
 Leu Ser His Leu Ile Ala Asp Lys Ile His Ala Arg Ser Ile Gly Pro
 1155 1160 1165
 Tyr Ser Leu Val Thr Gln Gln Pro Leu Gly Gly Lys Ala Gln Met Gly
 1170 1175 1180
 Gly Gln Arg Phe Gly Glu Met Glu Val Trp Ala Leu Glu Ala Tyr Gly
 1185 1190 1195 1200
 Val Ala His Met Leu Gln Glu Ile Leu Thr Val Lys Ser Asp Asp Val
 1205 1210 1215
 Ser Gly Arg Thr Arg Ile Tyr Glu Ser Ile Val Lys Gly Glu Asn Leu
 1220 1225 1230
 Leu Arg Ser Gly Thr Pro Glu Ser Phe Asn Val Leu Ile Lys Glu Met
 1235 1240 1245
 Gln Gly Leu Gly Leu Asp Val Arg Pro Met Val Val Asp Ala
 1250 1255 1260
 <210>98
 <211>1218
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>98
 Leu Glu Lys Ile Met Phe Gly Glu Asn Ser Arg Asp Ile Gly Val Leu
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 Ser Lys Glu Gly Leu Phe Asp Lys Leu Glu Ile Gly Ile Ala Ser Asp
 20 25 30
 Ile Thr Ile Arg Asp Lys Trp Ser Cys Gly Glu Ile Lys Lys Pro Glu
 35 40 45
 Thr Ile Asn Tyr Arg Thr Phe Lys Pro Glu Lys Gly Gly Leu Phe Cys
 50 55 60

Glu Lys Ile Leu Gly Pro Thr Lys Asp Trp Glu Cys Cys Cys Gly Lys
 65 70 75 80
 Tyr Lys Lys Ile Lys His Lys Gly Ile Val Cys Asp Arg Cys Gly Val
 85 90 95
 Glu Val Thr Leu Ser Lys Val Arg Arg Glu Arg Met Ala His Ile Glu
 100 105 110
 Leu Ala Val Pro Ile Val His Ile Trp Phe Phe Lys Thr Thr Pro Ser
 115 120 125
 Arg Ile Gly Asn Val Leu Gly Met Thr Ala Ser Asp Leu Glu Arg Val
 130 135 140
 Ile Tyr Tyr Glu Glu Tyr Val Val Ile Asp Pro Gly Lys Thr Asp Leu
 145 150 155 160
 Thr Lys Lys Gln Leu Leu Asn Asp Ala Gln Tyr Arg Glu Val Val Glu
 165 170 175
 Lys Trp Gly Lys Asp Ala Phe Val Ala Lys Met Gly Gly Glu Ala Ile
 180 185 190
 Tyr Asp Leu Leu Lys Ser Glu Asp Leu Gln Ser Leu Leu Lys Asp Leu
 195 200 205
 Lys Glu Arg Leu Arg Lys Thr Lys Ser Gln Gln Ala Arg Met Lys Leu
 210 215 220
 Ala Lys Arg Leu Lys Ile Ile Glu Gly Phe Val Ser Ser Ser Asn His
 225 230 235 240
 Pro Glu Trp Met Val Leu Lys Asn Ile Pro Val Val Pro Pro Asp Leu
 245 250 255
 Arg Pro Leu Val Pro Leu Asp Gly Gly Arg Phe Ala Thr Ser Asp Leu
 260 265 270
 Asn Asp Leu Tyr Arg Arg Val Ile Asn Arg Asn Asn Arg Leu Lys Ala
 275 280 285
 Ile Leu Arg Leu Lys Thr Pro Glu Val Ile Val Arg Asn Glu Lys Arg
 290 295 300
 Met Leu Gln Glu Ala Val Asp Ala Leu Phe Asp Asn Gly Arg His Gly
 305 310 315 320
 His Pro Val Met Gly Ala Gly Asn Arg Pro Leu Lys Ser Leu Ser Glu
 325 330 335
 Met Leu Lys Gly Lys Asn Gly Arg Phe Arg Gln Asn Leu Leu Gly Lys
 340 345 350
 Arg Val Asp Tyr Ser Gly Arg Ser Val Ile Ile Val Gly Pro Glu Leu
 355 360 365
 Lys Phe Asn Gln Cys Gly Leu Pro Lys Glu Met Ala Leu Glu Leu Phe
 370 375 380
 Glu Pro Phe Ile Ile Xaa Arg Leu Lys Asp Gln Gly Ser Val Tyr Thr
 385 390 395 400
 Ile Arg Ser Ala Lys Lys Met Ile Gln Arg Gly Ala Pro Glu Val Trp
 405 410 415
 Asp Val Leu Glu Glu Ile Ile Lys Gly His Pro Val Leu Leu Asn Arg
 420 425 430
 Ala Pro Thr Leu His Arg Leu Gly Ile Gln Ala Phe Glu Pro Val Leu
 435 440 445
 Ile Glu Gly Lys Ala Ile Arg Ile His Pro Leu Val Cys Ala Ala Phe
 450 455 460
 Asn Ala Asp Phe Asp Gly Asp Gln Met Ala Val His Val Pro Leu Ser
 465 470 475 480
 Val Glu Ala Gln Leu Glu Ala Lys Val Leu Met Met Ala Pro Asp Asn
 485 490 495
 Ile Phe Leu Pro Ser Ser Gly Lys Pro Val Ala Ile Pro Ser Lys Asp
 500 505 510
 Met Thr Leu Gly Leu Tyr Tyr Leu Met Ala Asp Pro Thr Tyr Phe Pro
 515 520 525
 Glu Glu His Gly Gly Lys Thr Lys Ile Phe Lys Asp Glu Ile Glu Val
 530 535 540
 Leu Arg Ala Leu Asn Asn Gly Gly Phe Ile Asp Asp Val Phe Gly Asp
 545 550 555 560
 Arg Arg Asp Glu Thr Gly Arg Gly Ile His Ile His Glu Lys Ile Lys
 565 570 575

Val Arg Ile Asp Gly Gln Ile Ile Glu Thr Thr Pro Gly Arg Val Leu
 580 585 590
 Phe Asn Arg Ile Val Pro Lys Glu Leu Gly Phe Gln Asn Tyr Ser Met
 595 600 605
 Pro Ser Lys Arg Ile Ser Glu Leu Ile Leu Gln Cys Tyr Lys Lys Val
 610 615 620
 Gly Leu Glu Ala Thr Val Arg Phe Leu Asp Asp Leu Lys Asp Leu Gly
 625 630 635 640
 Phe Ile Gln Ala Thr Lys Ala Ala Ile Ser Met Gly Leu Lys Asp Val
 645 650 655
 Arg Ile Pro Asp Ile Lys Ser His Ile Leu Lys Asp Ala Tyr Asp Lys
 660 665 670
 Val Ala Ile Val Lys Lys Gln Tyr Asp Asp Gly Ile Ile Thr Glu Gly
 675 680 685
 Glu Arg His Ser Lys Thr Ile Ser Ile Trp Thr Glu Val Ser Glu Gln
 690 695 700
 Leu Ser Asp Ala Leu Tyr Val Glu Ile Ser Lys Gln Thr Arg Ser Lys
 705 710 715 720
 His Asn Pro Leu Phe Leu Met Ile Asp Ser Gly Ala Arg Gly Asn Lys
 725 730 735
 Ser Gln Leu Lys Gln Leu Gly Ala Leu Arg Gly Leu Met Ala Lys Pro
 740 745 750
 Asn Gly Ala Ile Ile Glu Ser Pro Ile Thr Ser Asn Phe Arg Glu Gly
 755 760 765
 Leu Thr Val Leu Glu Tyr Ser Ile Ser Ser His Gly Ala Arg Lys Gly
 770 775 780
 Leu Ala Asp Thr Ala Leu Lys Thr Ala Asp Ser Gly Tyr Leu Thr Arg
 785 790 795 800
 Arg Leu Val Asp Val Ala Gln Asp Val Ile Ile Thr Glu Lys Asp Cys
 805 810 815
 Gly Thr Leu Asn His Ile Glu Ile Ser Ala Ile Gly Gln Gly Ser Glu
 820 825 830
 Glu Leu Leu Pro Leu Lys Asp Arg Ile Tyr Gly Arg Thr Val Ala Glu
 835 840 845
 Asp Val Tyr Gln Pro Gly Asp Lys Ser Arg Leu Leu Ala Gln Ser Gly
 850 855 860
 Asp Val Leu Asn Ser Val Gln Ala Glu Ala Ile Asp Asp Ala Gly Ile
 865 870 875 880
 Glu Thr Ile Lys Ile Arg Ser Thr Leu Thr Cys Glu Ser Pro Arg Gly
 885 890 895
 Val Cys Ala Lys Cys Tyr Gly Leu Asn Leu Ala Asn Gly Arg Leu Ile
 900 905 910
 Gly Met Gly Glu Ala Val Gly Ile Ile Ala Ala Gln Ser Ile Gly Glu
 915 920 925
 Pro Gly Thr Gln Leu Thr Met Arg Thr Phe His Leu Gly Gly Ile Ala
 930 935 940
 Ala Thr Ser Ser Thr Pro Glu Ile Ile Thr Asn Ser Asp Gly Ile Leu
 945 950 955 960
 Val Tyr Met Asp Leu Arg Val Val Leu Gly Gln Glu Gly His Asn Leu
 965 970 975
 Val Leu Asn Lys Lys Gly Ala Leu His Val Val Gly Asp Glu Gly Arg
 980 985 990
 Thr Leu Asn Glu Tyr Lys Lys Leu Leu Ser Thr Lys Ser Ile Glu Ser
 995 1000 1005
 Leu Glu Val Phe Pro Val Glu Leu Gly Val Lys Ile Leu Val Ala Asp
 1010 1015 1020
 Gly Thr Pro Val Ser Gln Gly Gln Arg Ile Ala Glu Val Glu Leu His
 1025 1030 1035 1040
 Asn Ile Pro Ile Ile Cys Asp Lys Pro Gly Phe Ile Lys Tyr Glu Asp
 1045 1050 1055
 Leu Val Glu Gly Ile Ser Thr Glu Lys Val Val Asn Lys Asn Thr Gly
 1060 1065 1070
 Leu Val Glu Leu Ile Val Lys Gln His Arg Gly Glu Leu His Pro Gln
 1075 1080 1085

Ile Ala Ile Tyr Asp Asp Ala Asp Leu Ser Glu Leu Val Gly Thr Tyr
 1090 1095 1100
 Ala Ile Pro Ser Gly Ala Ile Ile Ser Val Glu Glu Gly Gln Arg Val
 1105 1110 1115 1120
 Asp Pro Gly Met Leu Leu Ala Arg Leu Pro Arg Gly Ala Ile Lys Thr
 1125 1130 1135
 Lys Asp Ile Thr Gly Gly Leu Pro Arg Val Ala Glu Leu Val Glu Ala
 1140 1145 1150
 Arg Lys Pro Glu Asp Ala Ala Asp Ile Ala Lys Ile Asp Gly Val Val
 1155 1160 1165
 Asp Phe Lys Gly Ile Gln Lys Asn Lys Arg Ile Leu Val Val Cys Asp
 1170 1175 1180
 Glu Met Thr Gly Met Glu Glu Glu His Leu Ile Pro Leu Thr Lys His
 1185 1190 1195 1200
 Leu Ile Val Gln Arg Gly Asp Ser Val Ile Lys Gly Ser Ser Leu Pro
 1205 1210 1215
 Met Val

<210>99

<211>186

<212>PRT

<213>Chlamydia pneumoniae

<400>99

Gly Gln Gln Leu Thr Asp Gly Leu Val Val Pro His Glu Ile Leu Glu
 1 5 10 15
 Ile Cys Gly Val Arg Glu Leu Gln Lys Tyr Leu Val Asn Glu Val Gln
 20 25 30
 Glu Val Tyr Arg Leu Gln Gly Val Asp Ile Asn Asp Lys His Ile Glu
 35 40 45
 Ile Ile Val Arg Gln Met Leu Gln Lys Val Arg Ile Thr Asp Pro Gly
 50 55 60
 Asp Thr Thr Leu Leu Phe Gly Glu Asp Val Asn Lys Lys Glu Phe Tyr
 65 70 75 80
 Glu Glu Asn Arg Arg Thr Glu Glu Asp Gly Gly Lys Pro Ala Gln Ala
 85 90 95
 Val Pro Val Leu Leu Gly Ile Thr Lys Ala Ser Leu Gly Thr Glu Ser
 100 105 110
 Phe Ile Ser Ala Ala Ser Phe Gln Asp Thr Thr Arg Val Leu Thr Asp
 115 120 125
 Ala Ala Cys Cys Ser Lys Thr Asp Tyr Leu Leu Gly Phe Lys Glu Asn
 130 135 140
 Val Ile Met Gly His Met Ile Pro Gly Gly Thr Gly Phe Glu Thr His
 145 150 155 160
 Lys Arg Ile Lys Gln Tyr Leu Glu Lys Glu Gln Glu Asp Leu Val Phe
 165 170 175
 Asp Phe Val Ser Glu Thr Glu Cys Val Xaa
 180 185

<210>100

<211>337

<212>PRT

<213>Chlamydia pneumoniae

<400>100

Leu Glu Ile Asn Ser Asp Ala Lys Val Pro Met Ser Asn Gln Phe Asp
 1 5 10 15
 Gln Leu Lys Lys Leu Ser Thr Ile Val Cys Asp Ser Gly Asp Pro Glu
 20 25 30
 Leu Val Lys Ala Ser Gly Ser Gln Asp Ala Thr Thr Asn Pro Ser Leu
 35 40 45
 Ile Leu Lys Val Ala Gln Glu Pro Lys Phe Gln Glu Leu Leu Asn Glu
 50 55 60
 Ala Val Val Trp Gly Ile Arg Gln Asn Gly Asp Asp Leu Gln Thr Leu
 65 70 75 80
 Ser Phe Ile Leu Asp Lys Ile Gln Val Asn Phe Ala Leu Glu Ile Ile
 85 90 95

Lys Asn Ile Pro Gly Arg Ile Ser Leu Glu Ile Asp Ala Arg Leu Ser
 100 105 110
 Phe Asn Val Glu Ala Met Val Gln Arg Ala Val Phe Leu Ser Gln Leu
 115 120 125
 Phe Glu Ala Met Gly Gly Asp Lys Lys Arg Leu Leu Val Lys Ile Pro
 130 135 140
 Gly Thr Trp Glu Gly Ile Arg Ala Val Glu Phe Leu Glu Ala Lys Gly
 145 150 155 160
 Ile Ala Cys Asn Val Thr Leu Ile Phe Asn Leu Val Gln Ala Ile Ala
 165 170 175
 Ala Ala Lys Ala Lys Ala Thr Leu Ile Ser Pro Phe Val Gly Arg Ile
 180 185 190
 Tyr Asp Trp Trp Ile Ala Ala Tyr Gly Asp Glu Gly Tyr Ser Ile Asp
 195 200 205
 Ala Asp Pro Gly Val Ala Ser Val Ser Asn Ile Tyr Ala Tyr Tyr Lys
 210 215 220
 Lys Phe Gly Ile Pro Thr Gln Ile Met Ala Ala Ser Phe Arg Thr Lys
 225 230 235 240
 Glu Gln Val Leu Ala Leu Ala Gly Cys Asp Leu Leu Thr Ile Ser Pro
 245 250 255
 Lys Leu Leu Asp Glu Leu Lys Lys Ser Gln His Pro Val Lys Lys Glu
 260 265 270
 Leu Asp Pro Ala Glu Ala Lys Lys Leu Asp Val Gln Pro Ile Glu Leu
 275 280 285
 Thr Glu Ser Phe Phe Arg Phe Leu Met Asn Glu Asp Ala Met Ala Thr
 290 295 300
 Xaa Lys Leu Ala Glu Gly Ile Arg Ile Phe Ala Gly Asp Thr Gln Ile
 305 310 315 320
 Leu Glu Thr Ala Ile Thr Glu Phe Ile Lys Gln Ile Ala Ala Glu Gly
 325 330 335
 Ala

<210>101

<211>132

<212>PRT

<213>Chlamydia pneumoniae

<400>101

Ser Glu Met Lys Asn Lys Met Asp Tyr Lys Ser Gln Leu Val Phe Ser
 1 5 10 15
 Cys Pro Cys Cys Cys Lys Gly Asn Val Cys Phe Ser Val Phe Asn Leu
 20 25 30
 Asp Val Ile Leu Thr Cys Asn Val Cys Ser Ser Thr Tyr Thr Phe Asp
 35 40 45
 Ser Val Ile Arg Asn Glu Ile Arg Gln Phe Val Ala Leu Cys Lys Arg
 50 55 60
 Ile His Asp Ala Asn Ser Ile Leu Gly Asn Ala Thr Val Ser Val Ser
 65 70 75 80
 Val Glu Asp Asn Gln Met Asp Ile Pro Phe Gln Leu Leu Phe Ser Arg
 85 90 95
 Phe Pro Val Val Leu Asn Leu Ser Leu Asp Gly Lys Lys Ile Ala Ile
 100 105 110
 Arg Phe Leu Phe Asp Ala Leu Asn Thr Ser Ile Leu His Gln Glu Ser
 115 120 125
 Asp Leu Ile Ser
 130

<210>102

<211>192

<212>PRT

<213>Chlamydia pneumoniae

<400>102

Asn Lys Ser Thr Ala Arg Lys Lys Ile Gly Lys Phe Glu Lys Lys Pro
 1 5 10 15
 Ser Leu Ser Pro Val Gln Trp Val Arg Tyr Ser Gly Lys Asn Tyr Ser
 20 25 30

WO 99/27105

PCT/IB98/01890

Ile Gln Thr Pro Ser Leu Trp Gln Cys Ile Asp Asp Lys Thr Gln Leu
 35 40 45
 Pro Glu Lys Leu Asp Val Leu Ile Gly Lys Gly Lys Gly Asn Leu
 50 55 60
 Thr Pro Thr Ile Asn Ile Ala Gln Glu Ile Thr Ser Lys Ser Ser Lys
 65 70 75 80
 Glu Tyr Ile Glu Glu Ile Leu Ala Tyr His Lys Ala Asn Glu Met Thr
 85 90 95
 Leu Glu Ser Gly Ile Phe Thr Gln Ile Gln Ser Pro Ser Gly Glu Phe
 100 105 110
 Thr Ile Ile Lys Thr Glu Lys Asn Ser Ser Trp Gly Arg Val Phe Cys
 115 120 125
 Leu Gln Ala Thr Thr Val Ile Asp His Thr Ala Tyr Ile Phe Thr Ser
 130 135 140
 Thr Ala Thr Leu Asp Asp Tyr Ala Glu Leu Ser Phe Thr Phe Leu Lys
 145 150 155 160
 Val Val Ser Ser Phe Gln Ile Arg Gly Gly Lys Glu Ala Thr Ser Gly
 165 170 175
 Asp Ala Ile Leu Glu Lys Ala Leu Glu Ala Leu Gln Asn Glu Asn Lys
 180 185 190

<210>103

<211>163

<212>PRT

<213>Chlamydia pneumoniae

<400>103

Asn Ile Met Ala Asn Leu Asn Ala Asp Gly Lys Leu Lys Gln Ile Cys
 1 5 10 15
 Asp Ala Leu Arg Leu Asp Thr Leu Lys Pro Ala Glu Asp Glu Ala Ala
 20 25 30
 Ala Leu Leu His Asn Ala Lys Glu Gln Ala Lys Arg Ile Ile Gln Glu
 35 40 45
 Ala Gln Glu Glu Ala Arg Lys Ile Leu Glu Thr Ala Glu Glu Arg Ala
 50 55 60
 His Gln Lys Ile Lys Gln Gly Glu Val Ala Leu Ser Gln Ala Gly Lys
 65 70 75 80
 Arg Ala Leu Glu Ala Leu Lys Gln Ala Val Glu Asn Lys Ile Phe Arg
 85 90 95
 Glu Ser Leu Val Glu Trp Leu Glu His Val Thr Thr Asp Pro Glu Val
 100 105 110
 Ser Thr Lys Leu Ile Gln Ala Leu Val Gln Ala Leu Glu Ala Gln Gly
 115 120 125
 Val Ser Gly Asn Leu Thr Ala Tyr Ile Gly Lys His Val Ser Pro Arg
 130 135 140
 Ala Val Asn Glu Leu Leu Arg Lys Gly Cys Asn Asn Lys Asn Tyr Glu
 145 150 155 160
 Arg Lys Val

<210>104

<211>211

<212>PRT

<213>Chlamydia pneumoniae

<400>104

Ser His Glu Lys Ile Phe Ser Ile Phe Lys Val Val Val Met Thr Gln
 1 5 10 15
 Tyr Tyr Phe Leu Ser Ser Phe Leu Pro Thr Gln Leu Pro Glu Ser Val
 20 25 30
 Pro Leu Phe Ser Ile Ser Asp Leu Asp Asp Leu Leu Tyr Leu Asn Leu
 35 40 45
 Ser Glu Asn Asp Leu Cys Asn Tyr Gly Leu Leu Lys Arg Phe Phe Asp
 50 55 60
 Phe Glu Asn Phe Ala Phe Phe Trp Ala Gly Lys Pro Ile Pro Phe Ser
 65 70 75 80
 Phe Gly Glu Val Thr Gln Glu Asn Val Glu Arg Met Leu Ser Ser Gln
 85 90 95

WO 99/27105

PCT/IB98/01890

Gln Trp Ser Asp Asp Asn Asp Phe Glu Asp Phe Phe Lys Asp Phe Leu
 100 105 110
 Met Asn His Lys Ser Ser Gln Asp Arg Leu Asn His Phe Ser Asp Leu
 115 120 125
 Phe Arg Glu Phe Leu Ser Tyr His Gln Thr Asn Ser Ser Lys Phe Leu
 130 135 140
 Gln Asp Tyr Phe Arg Phe Gln Gln Gln Leu Arg Val Val Leu Ala Gly
 145 150 155 160
 Phe Arg Ala Arg Val Leu Asn Met Asp Val Ser Tyr Val Leu Arg Asp
 165 170 175
 Glu Asp Ser Ser Asp Pro Val Val Leu Glu Val Leu Met Gln Lys Asp
 180 185 190
 Ser Pro Asn Tyr Glu Xaa Pro Glu Glu Phe Xaa Asp Leu Gln Gly Val
 195 200 205
 Leu Asp Asp
 210
 <210>105
 <211>440
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>105
 Lys Arg Gln Ser Asn Gly Asn Ser Phe Arg Thr Lys Leu Ala Gln Gly
 1 5 10 15
 His Val Ile Glu Ala Tyr Gly Asn Leu Leu Arg Val Arg Phe Asp Gly
 20 25 30
 Tyr Val Arg Gln Gly Glu Val Ala Tyr Val Asn Val Asp Asn Thr Trp
 35 40 45
 Leu Lys Ala Glu Val Ile Glu Val Ala Asp Gln Glu Val Lys Val Gln
 50 55 60
 Val Phe Glu Asp Thr Gln Gly Ala Cys Arg Gly Ala Leu Val Thr Phe
 65 70 75 80
 Ser Gly His Leu Leu Glu Ala Glu Leu Gly Pro Gly Leu Leu Gln Gly
 85 90 95
 Ile Phe Asp Gly Leu Gln Asn Arg Leu Glu Val Leu Ala Glu Asp Ser
 100 105 110
 Ser Phe Leu Gln Arg Gly Lys His Val Asn Ala Ile Ser Asp His Asn
 115 120 125
 Leu Trp Asn Tyr Thr Pro Val Ala Ser Val Gly Asp Thr Leu Arg Arg
 130 135 140
 Gly Asp Leu Leu Gly Thr Val Pro Glu Gly Arg Phe Thr His Lys Ile
 145 150 155 160
 Met Val Pro Phe Ser Cys Phe Gln Glu Val Thr Leu Thr Trp Val Ile
 165 170 175
 Ser Glu Gly Thr Tyr Asn Ala His Thr Val Val Ala Lys Ala Arg Asp
 180 185 190
 Ala Gln Gly Lys Glu Cys Ala Phe Thr Met Val Gln Arg Trp Pro Ile
 195 200 205
 Lys Gln Ala Phe Ile Glu Gly Glu Lys Ile Pro Ala His Lys Ile Met
 210 215 220
 Asp Val Gly Leu Arg Ile Leu Asp Thr Gln Ile Pro Val Leu Lys Gly
 225 230 235 240
 Gly Thr Phe Cys Thr Pro Gly Pro Phe Gly Ala Gly Lys Thr Val Leu
 245 250 255
 Gln His His Leu Ser Lys Tyr Ala Ala Val Asp Ile Val Ile Leu Cys
 260 265 270
 Ala Cys Gly Glu Arg Ala Gly Glu Val Val Glu Val Leu Gln Glu Phe
 275 280 285
 Pro His Leu Ile Asp Pro His Thr Gly Lys Ser Leu Met His Arg Thr
 290 295 300
 Cys Ile Ile Cys Asn Thr Ser Ser Met Pro Val Ala Ala Arg Glu Ser
 305 310 315 320
 Ser Ile Tyr Leu Gly Val Thr Ile Ala Glu Tyr Tyr Arg Gln Met Gly
 325 330 335
 Leu Asp Ile Leu Leu Leu Ala Asp Ser Thr Ser Arg Trp Ala Gln Ala

340 345 350
 Leu Arg Glu Ile Ser Gly Arg Leu Glu Glu Ile Pro Gly Glu Glu Ala
 355 360 365
 Phe Pro Ala Tyr Leu Ser Ser Arg Ile Ala Ala Phe Tyr Glu Arg Gly
 370 375 380
 Gly Ala Ile Thr Thr Lys Asp Gly Ser Glu Gly Ser Leu Thr Ile Cys
 385 390 395 400
 Gly Ala Val Ser Pro Ala Gly Gly Asn Phe Glu Glu Pro Val Thr Gln
 405 410 415
 Ser Thr Leu Ala Val Val Gly Ala Phe Cys Gly Leu Ser Lys Ala Arg
 420 425 430
 Leu Thr His Val Gly Ile Leu Gln
 435 440

<210>106

<211>185

<212>PRT

<213>Chlamydia pneumoniae

<400>106

Arg Thr Ser His Ser Ile Tyr Ile Ser Cys Ser Arg Ser Val Leu Trp
 1 5 10 15
 Ser Phe Lys Ser Thr Thr Asp Ala Arg Arg Tyr Pro Ser Ile Asp Pro
 20 25 30
 Leu Ile Ser Trp Ser Lys Tyr Leu Asn Gln Val Gly Gln Ile Leu Glu
 35 40 45
 Glu Lys Val Ser Gly Trp Gly Gly Ala Val Lys Lys Ala Ala Gln Phe
 50 55 60
 Leu Glu Lys Gly Ser Glu Ile Gly Lys Arg Met Glu Val Val Gly Glu
 65 70 75 80
 Glu Gly Val Ser Met Glu Asp Met Glu Ile Tyr Leu Lys Ala Glu Leu
 85 90 95
 Tyr Asp Phe Cys Tyr Leu Gln Gln Asn Ala Phe Asp Pro Val Asp Cys
 100 105 110
 Tyr Cys Pro Phe Glu Arg Gln Ile Glu Leu Phe Ser Leu Ile Ser Arg
 115 120 125
 Ile Phe Asp Ala Lys Phe Val Phe Asp Ser Pro Asp Asp Ala Arg Ser
 130 135 140
 Phe Phe Leu Glu Leu Gln Ser Lys Ile Lys Thr Leu Asn Gly Leu Lys
 145 150 155 160
 Phe Leu Ser Glu Glu Tyr His Glu Ser Lys Glu Val Ile Val Arg Leu
 165 170 175
 Leu Glu Lys Thr Met Val Gln Met Ala
 180 185

<210>107

<211>438

<212>PRT

<213>Chlamydia pneumoniae

<400>107

Met Gln Thr Ile Tyr Thr Lys Ile Thr Asp Ile Lys Gly Asn Leu Ile
 1 5 10 15
 Thr Val Glu Ala Glu Gly Ala Arg Leu Gly Glu Leu Ala Thr Ile Thr
 20 25 30
 Arg Ser Asp Gly Arg Ser Ser Tyr Ala Ser Val Leu Arg Phe Asp Leu
 35 40 45
 Lys Lys Val Thr Leu Gln Val Phe Gly Gly Thr Ser Gly Leu Ser Thr
 50 55 60
 Gly Asp His Val Thr Phe Leu Gly Arg Pro Met Glu Val Thr Phe Gly
 65 70 75 80
 Ser Ser Leu Leu Gly Arg Arg Leu Asn Gly Ile Gly Lys Pro Ile Asp
 85 90 95
 Asn Glu Gly Glu Cys Phe Gly Glu Pro Ile Glu Ile Ala Thr Pro Thr
 100 105 110
 Phe Asn Pro Val Cys Arg Ile Val Pro Arg Ser Met Val Arg Thr Asn
 115 120 125
 Ile Pro Met Ile Asp Val Phe Asn Cys Leu Val Lys Ser Gln Lys Ile

130 135 140
 Pro Ile Phe Ser Ser Ser Gly Glu His His Asn Ala Leu Leu Met Arg
 145 150 155 160
 Ile Ala Ala Gln Thr Asp Ala Asp Ile Val Val Ile Gly Gly Met Gly
 165 170 175
 Leu Thr Phe Val Asp Tyr Ser Phe Phe Val Glu Glu Ser Lys Lys Leu
 180 185 190
 Gly Phe Ala Asp Lys Cys Val Met Phe Ile His Lys Ala Val Asp Ala
 195 200 205
 Pro Val Glu Cys Val Leu Val Pro Asp Met Ala Leu Ala Cys Ala Glu
 210 215 220
 Lys Phe Ala Val Glu Glu Lys Lys Asn Val Leu Val Leu Leu Thr Asp
 225 230 235 240
 Met Thr Ala Phe Ala Asp Ala Leu Lys Glu Ile Ser Ile Thr Met Asp
 245 250 255
 Gln Ile Pro Ala Asn Arg Gly Tyr Pro Gly Ser Leu Tyr Ser Asp Leu
 260 265 270
 Ala Leu Arg Tyr Glu Lys Ala Val Glu Ile Ala Asp Gly Gly Ser Ile
 275 280 285
 Thr Leu Ile Thr Val Thr Thr Met Pro Ser Asp Asp Ile Thr His Pro
 290 295 300
 Val Pro Asp Asn Thr Gly Tyr Ile Thr Glu Gly Gln Phe Tyr Leu Arg
 305 310 315 320
 Asn Asn Arg Ile Asp Pro Phe Gly Ser Leu Ser Arg Leu Lys Gln Leu
 325 330 335
 Val Ile Gly Lys Val Thr Arg Glu Asp His Gly Asp Leu Ala Asn Ala
 340 345 350
 Leu Ile Arg Leu Tyr Ala Asp Ser Arg Lys Ala Thr Glu Arg Met Ala
 355 360 365
 Met Gly Phe Lys Leu Ser Asn Trp Asp Lys Lys Leu Leu Ala Phe Ser
 370 375 380
 Glu Leu Phe Glu Thr Arg Leu Met Ser Leu Glu Val Asn Ile Pro Leu
 385 390 395 400
 Glu Glu Ala Leu Asp Ile Gly Trp Lys Ile Leu Ala Gln Ser Phe Thr
 405 410 415
 Ser Glu Glu Val Gly Ile Lys Ala Gln Leu Ile Asn Lys Tyr Trp Pro
 420 425 430
 Lys Ala Cys Leu Ser Lys
 435

<210>108

<211>214

<212>PRT

<213>Chlamydia pneumoniae

<400>108

Val Leu Ala Lys Ser Met Ser Val Gln Val Lys Leu Thr Lys Asn Ser
 1 5 10 15
 Phe Arg Leu Glu Lys Gln Lys Leu Ala Arg Leu Gln Thr Tyr Leu Pro
 20 25 30
 Thr Leu Lys Leu Lys Lys Ala Leu Leu Gln Ala Glu Val Gln Asn Ala
 35 40 45
 Val Lys Asp Ala Ala Glu Cys Asp Lys Asp Tyr Val Gln Ala Tyr Glu
 50 55 60
 Arg Ile Tyr Ala Phe Ala Glu Leu Phe Ser Ile Pro Leu Cys Thr Asp
 65 70 75 80
 Cys Val Glu Lys Ser Phe Glu Ile Gln Ser Ile Asp Asn Asp Phe Glu
 85 90 95
 Asn Ile Ala Gly Val Glu Val Pro Ile Val Arg Glu Val Thr Leu Phe
 100 105 110
 Pro Ala Ser Tyr Ser Leu Leu Gly Thr Pro Ile Trp Leu Asp Thr Met
 115 120 125
 Leu Ser Ala Ser Lys Glu Leu Val Val Lys Lys Val Met Ala Glu Val
 130 135 140
 Ser Lys Glu Arg Leu Lys Ile Leu Glu Glu Glu Leu Arg Ala Val Ser
 145 150 155 160

Ile Arg Val Asn Leu Phe Glu Lys Lys Leu Ile Pro Glu Thr Thr Lys
 165 170 175
 Ile Leu Lys Lys Ile Ala Val Phe Leu Ser Asp Arg Ser Ile Thr Asp
 180 185 190
 Val Gly Gln Val Lys Met Ala Lys Lys Lys Ile Glu Leu Arg Lys Ala
 195 200 205
 Arg Gly Asp Glu Cys Val
 210
 <210>109
 <211>660
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>109
 Val Arg Leu Asn Ile His Lys Tyr Leu Phe Ile Gly Arg Asn Lys Ala
 1 5 10 15
 Asp Phe Phe Ser Ala Ser Arg Glu Leu Gly Val Val Glu Phe Ile Ser
 20 25 30
 Lys Lys Cys Phe Ile Thr Thr Glu Gln Gly His Arg Phe Val Glu Cys
 35 40 45
 Leu Lys Val Phe Asp His Leu Glu Ala Glu Tyr Ser Leu Glu Ala Leu
 50 55 60
 Glu Phe Val Lys Asp Glu Ser Val Ser Val Glu Asp Ile Val Ser Glu
 65 70 75 80
 Val Leu Thr Leu Asn Lys Glu Ile Lys Gly Leu Leu Glu Thr Val Lys
 85 90 95
 Ala Leu Arg Lys Glu Ile Val Arg Val Lys Pro Leu Gly Ala Phe Ser
 100 105 110
 Ser Ser Glu Ile Ala Glu Leu Ser Arg Lys Thr Gly Ile Ser Leu Arg
 115 120 125
 Phe Phe Tyr Arg Thr His Lys Asp Asn Glu Asp Leu Glu Glu Asp Ser
 130 135 140
 Pro Asn Val Phe Tyr Leu Ser Thr Ala Tyr Asn Phe Asp Tyr Tyr Leu
 145 150 155 160
 Val Leu Gly Val Val Asp Leu Pro Arg Asp Arg Tyr Thr Glu Ile Glu
 165 170 175
 Ala Pro Arg Ser Val Asn Glu Leu Gln Val Asp Leu Ala Asn Leu Gln
 180 185 190
 Arg Glu Ile Arg Asn Arg Ser Asp Arg Leu Cys Asp Leu Tyr Ala Tyr
 195 200 205
 Arg Arg Glu Val Leu Arg Gly Leu Cys Asn Tyr Asp Asn Glu Gln Arg
 210 215 220
 Leu His Gln Ala Lys Glu Cys Cys Glu Asp Leu Phe Asp Gly Lys Val
 225 230 235 240
 Phe Ala Val Ala Gly Trp Val Ile Val Asp Arg Ile Lys Glu Leu Gln
 245 250 255
 Ser Leu Cys Asn Arg Tyr Gln Ile Tyr Met Glu Arg Val Pro Val Asp
 260 265 270
 Pro Asp Glu Thr Ile Pro Thr Tyr Leu Glu Asn Lys Gly Val Gly Val
 275 280 285
 Met Gly Glu Asp Leu Val Gln Ile Tyr Asp Thr Pro Ala Tyr Ser Asp
 290 295 300
 Lys Asp Pro Ser Thr Trp Val Phe Phe Ala Phe Val Leu Phe Phe Ser
 305 310 315 320
 Met Ile Val Asn Asp Ala Gly Tyr Gly Leu Leu Phe Leu Met Ser Ser
 325 330 335
 Leu Leu Phe Ser Trp Lys Phe Arg Arg Lys Met Lys Phe Ser Lys His
 340 345 350
 Leu Ser Arg Met Leu Lys Met Thr Ala Ile Leu Gly Leu Gly Cys Ile
 355 360 365
 Cys Trp Gly Thr Thr Thr Thr Ser Phe Phe Gly Met Ser Phe Ser Lys
 370 375 380
 Thr Ser Val Phe Arg Glu Tyr Ser Met Thr His Val Leu Ala Leu Lys
 385 390 395 400
 Lys Ala Glu Tyr Tyr Leu Gln Met Arg Pro Lys Ala Tyr Lys Glu Leu

405 410 415
 Thr Asn Glu Tyr Pro Ser Leu Lys Ala Ile Arg Asp Pro Lys Ala Phe
 420 425 430
 Leu Leu Ala Thr Glu Ile Gly Ser Ala Gly Ile Glu Ser Arg Tyr Val
 435 440 445
 Val Tyr Asp Lys Phe Ile Asp Asn Ile Leu Met Glu Leu Ala Leu Phe
 450 455 460
 Ile Gly Val Val His Leu Ser Leu Gly Met Leu Arg Tyr Leu Arg Tyr
 465 470 475 480
 Arg Tyr Ser Gly Ile Gly Trp Ile Leu Phe Met Val Ser Ala Tyr Leu
 485 490 495
 Tyr Val Pro Ile Tyr Leu Gly Thr Val Ser Leu Ile His Tyr Leu Phe
 500 505 510
 His Val Pro Tyr Glu Leu Gly Gly Gln Ile Gly Tyr Tyr Gly Met Phe
 515 520 525
 Gly Gly Ile Gly Leu Ala Val Val Leu Ala Met Ile Gln Arg Ser Trp
 530 535 540
 Arg Gly Val Glu Glu Ile Ile Ser Val Ile Gln Val Phe Ser Asp Val
 545 550 555 560
 Leu Ser Tyr Leu Arg Ile Tyr Ala Leu Gly Leu Ala Gly Ala Met Met
 565 570 575
 Gly Ala Thr Phe Asn Gln Met Gly Ala Arg Leu Pro Met Leu Leu Gly
 580 585 590
 Ser Ile Val Ile Leu Leu Gly His Ser Val Asn Ile Ile Leu Ser Ile
 595 600 605
 Met Gly Gly Val Ile His Gly Leu Arg Leu Asn Phe Ile Glu Trp Tyr
 610 615 620
 His Tyr Ser Phe Asp Gly Gly Gly Arg Pro Leu Arg Pro Leu Arg Lys
 625 630 635 640
 Ile Val Cys Ser Glu Asp Ala Glu Ala Ser Gly Ile His Leu Asp Asn
 645 650 655
 Asn Ser Ile Val
 660

<210>110

<211>149

<212>PRT

<213>Chlamydia pneumoniae

<400>110

Leu Lys Gly Ala His Glu Val Ser Met Ile Asp Met Ser Val Val Gly
 1 5 10 15
 Pro Ala Leu Val Leu Gly Leu Ala Met Ile Gly Ser Ala Ile Gly Cys
 20 25 30
 Gly Met Ala Gly Val Ala Ser His Ala Val Met Ser Arg Ile Asp Glu
 35 40 45
 Gly His Gly Lys Leu Ile Gly Met Ser Ala Met Pro Ser Ser Gln Ser
 50 55 60
 Ile Tyr Gly Phe Ile Leu Met Leu Leu Met Gln Ala Ala Ile Lys Asn
 65 70 75 80
 Gly Thr Leu Ser Pro Val Gly Gly Ile Ala Ile Gly Leu Ser Val Gly
 85 90 95
 Ala Ala Leu Leu Val Ser Ser Val Met Gln Gly Lys Cys Cys Val Ser
 100 105 110
 Gly Ile Gln Ala Tyr Ala Arg Ser Ser Ser Ile Tyr Gly Lys Cys Tyr
 115 120 125
 Ala Ala Ile Gly Ile Val Glu Ser Phe Ser Leu Phe Ala Val Val Phe
 130 135 140
 Ala Leu Leu Leu Leu
 145

<210>111

<211>940

<212>PRT

<213>Chlamydia pneumoniae

<400>111

Met Thr Thr Glu Asp Phe Pro Lys Ala Tyr Asn Phe Gln Asp Thr Glu

1 5 10 15
 Pro Glu Leu Tyr Val Phe Trp Glu Lys Asn Gly Met Phe Lys Ala Glu
 20 25 30
 Ala Ser Ser Asp Lys Pro Pro Tyr Ser Val Ile Met Pro Pro Pro Asn
 35 40 45
 Val Thr Gly Val Leu His Met Gly His Ala Leu Val Asn Thr Leu Gln
 50 55 60
 Asp Val Leu Val Arg Tyr Lys Arg Met Ser Gly Phe Glu Val Cys Trp
 65 70 75 80
 Ile Pro Gly Thr Asp His Ala Gly Ile Ala Thr Gln Ala Val Val Glu
 85 90 95
 Arg His Leu Gln Ala Ser Glu Gly Lys Arg Arg Thr Asp Tyr Ser Arg
 100 105 110
 Glu Asp Phe Leu Lys His Ile Trp Ala Trp Lys Glu Lys Ser Glu Lys
 115 120 125
 Val Val Leu Ser Gln Leu Arg Gln Leu Gly Cys Ser Cys Asp Trp Asp
 130 135 140
 Arg Lys Arg Phe Thr Met Glu Pro Leu Ala Asn Arg Ala Val Lys Lys
 145 150 155 160
 Ala Phe Lys Thr Leu Phe Glu Asn Gly Tyr Ile Tyr Arg Gly Tyr Tyr
 165 170 175
 Leu Val Asn Trp Asp Pro Val Leu Gln Thr Ala Leu Ala Asp Asp Glu
 180 185 190
 Val Glu Tyr Glu Glu Lys Asp Gly Trp Leu Tyr Tyr Ile Arg Tyr Arg
 195 200 205
 Met Val Gly Ser Gln Glu Ser Ile Val Val Ala Thr Thr Arg Pro Glu
 210 215 220
 Thr Ser Leu Gly Asp Thr Gly Ile Ala Val Ser Pro Asn Asp Glu Arg
 225 230 235 240
 Tyr Ala Ser Trp Ile Gly Ala Ser Val Glu Val Pro Phe Val Asn Arg
 245 250 255
 Gln Ile Pro Ile Ile Gly Asp Ala Ser Val Asp Pro Thr Phe Gly Thr
 260 265 270
 Gly Ala Val Lys Val Thr Pro Ala His Asp Lys Asp Asp Tyr Leu Met
 275 280 285
 Gly Thr Asn His His Leu Pro Met Ile Asn Ile Leu Thr Pro Ser Gly
 290 295 300
 Gly Ile Asn Glu Asn Gly Gly Pro Phe Ala Gly Met Ala Lys Glu Lys
 305 310 315 320
 Ala Arg Glu Glu Ile Leu Ile Ala Leu Glu Glu Gln Gly Leu Phe Val
 325 330 335
 Arg Lys Glu Pro Tyr Lys Leu Arg Val Gly Val Ser Tyr Arg Ser Gly
 340 345 350
 Ala Val Ile Glu Pro Tyr Leu Ser Lys Gln Trp Phe Val Ser Val Ser
 355 360 365
 Glu Phe Arg Gly Ala Leu Arg Glu Phe Val Glu Ser Gln Asp Ile Lys
 370 375 380
 Ile Phe Pro Lys Asp Phe Val Lys Asn Tyr Leu Ser Trp Val Asn His
 385 390 395 400
 Leu Arg Asp Trp Cys Ile Ser Arg Gln Leu Trp Trp Gly His Arg Ile
 405 410 415
 Pro Val Trp Tyr His Lys Asn His Asp Glu Arg Val Leu Cys Tyr Asp
 420 425 430
 Gly Glu Gly Ile Pro Glu Glu Val Ala Gln Asp Pro Asp Ser Trp Tyr
 435 440 445
 Gln Asp Pro Asp Val Leu Asp Thr Trp Phe Ser Ser Gly Leu Trp Pro
 450 455 460
 Leu Thr Cys Leu Gly Trp Pro Asp Glu Asn Ser Pro Asp Leu Lys Lys
 465 470 475 480
 Phe Tyr Pro Thr Ala Leu Leu Val Thr Gly His Asp Ile Leu Phe Phe
 485 490 495
 Trp Val Thr Arg Met Val Leu Leu Cys Ser Ser Met Ser Gly Glu Lys
 500 505 510
 Pro Phe Ser Glu Val Phe Leu His Gly Leu Ile Phe Gly Lys Ser Tyr

515 520 525
 Lys Arg Tyr Asn Asp Phe Gly Glu Trp Ser Tyr Ile Ser Gly Lys Glu
 530 535 540
 Lys Leu Ala Tyr Asp Met Gly Glu Ala Leu Pro Asp Gly Val Val Ala
 545 550 555 560
 Lys Trp Glu Lys Leu Ser Lys Ser Lys Gly Asn Val Ile Asp Pro Leu
 565 570 575
 Glu Met Ile Ala Thr Tyr Gly Thr Asp Ala Val Arg Leu Thr Leu Cys
 580 585 590
 Ser Cys Ala Asn Arg Gly Glu Gln Ile Asp Leu Asp Tyr Arg Leu Phe
 595 600 605
 Glu Glu Tyr Lys His Phe Ala Asn Lys Val Trp Asn Gly Ala Arg Phe
 610 615 620
 Ile Phe Gly His Ile Ser Asp Leu Gln Gly Lys Asp Leu Leu Ala Gly
 625 630 635 640
 Ile Asp Glu Asp Ser Leu Gly Leu Glu Asp Phe Tyr Ile Leu Asp Gly
 645 650 655
 Phe Asn Gln Leu Ile His Gln Leu Glu Ala Tyr Ala Thr Tyr Ala
 660 665 670
 Phe Asp Lys Val Ala Thr Leu Ala Tyr Glu Phe Phe Arg Asn Asp Leu
 675 680 685
 Cys Ser Thr Tyr Ile Glu Ile Ile Lys Pro Thr Leu Phe Gly Lys Gln
 690 695 700
 Gly Asn Glu Ala Ser Gln Ser Thr Lys Arg Thr Leu Leu Ala Val Leu
 705 710 715 720
 Leu Ile Asn Val Leu Gly Val Leu His Pro Val Ala Pro Phe Ile Thr
 725 730 735
 Glu Ser Leu Phe Leu Arg Ile Gln Asp Thr Leu Gly Ala Leu Pro Glu
 740 745 750
 Gly Asp Gly Asp Ala Phe Thr Gly His Ala Leu Arg Met Leu Arg Ser
 755 760 765
 Arg Ala Cys Met Glu Ala Pro Tyr Pro Lys Ala Phe Asp Val Lys Ile
 770 775 780
 Pro Gln Asp Leu Arg Glu Ser Phe Thr Leu Ala Gln Arg Leu Val Tyr
 785 790 795 800
 Thr Ile Arg Asn Ile Arg Gly Glu Met Gln Leu Asp Pro Arg Leu His
 805 810 815
 Leu Lys Ala Phe Val Val Cys Ser Asp Thr Thr Glu Ile Gln Ser Cys
 820 825 830
 Ile Pro Ile Leu Gln Ala Leu Gly Gly Leu Glu Ser Ile Gln Leu Leu
 835 840 845
 Asp Lys Glu Pro Glu Lys Gly Leu Tyr Ser Phe Gly Val Val Asp Thr
 850 855 860
 Ile Arg Leu Gly Ile Phe Val Pro Glu Glu His Leu Leu Lys Glu Lys
 865 870 875 880
 Gly Arg Leu Glu Lys Glu Arg Val Arg Leu Glu Arg Ala Val Glu Asn
 885 890 895
 Leu Glu Arg Leu Leu Gly Asp Glu Ser Phe Cys Gln Lys Ala Asn Pro
 900 905 910
 Asn Leu Val Val Ala Lys Gln Glu Ala Leu Lys Asn Asn Arg Ile Glu
 915 920 925
 Leu Gln Gly Ile Leu Asp Lys Leu Ala Ser Phe Ala
 930 935 940
 <210>112
 <211>945
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>112
 Ala Cys Ile Val Cys Leu Asp Arg Glu Asp Gln Arg Ser Leu Glu Arg
 1 5 10 15
 Tyr Asp Ile Val Arg Ile Ile Gly Lys Gly Gly Met Gly Glu Val Tyr
 20 25 30
 Leu Ala Tyr Asp Pro Val Cys Ser Arg Lys Val Ala Leu Lys Lys Ile
 35 40 45

Arg Glu Asp Leu Ala Glu Asn Pro Leu Leu Lys Arg Arg Phe Leu Arg
 50 55 60
 Glu Ala Arg Ile Ala Ala Asp Leu Ile His Pro Gly Val Val Pro Val
 65 70 75 80
 Tyr Thr Ile Tyr Ser Glu Lys Asp Pro Val Tyr Tyr Thr Met Pro Tyr
 85 90 95
 Ile Glu Gly Tyr Thr Leu Lys Thr Leu Leu Lys Ser Val Trp Gln Lys
 100 105 110
 Glu Ser Leu Ser Lys Glu Leu Ala Glu Lys Thr Ser Val Gly Ala Phe
 115 120 125
 Leu Ser Ile Phe His Lys Ile Cys Cys Thr Ile Glu Tyr Val His Ser
 130 135 140
 Arg Gly Ile Leu His Arg Asp Leu Lys Pro Asp Asn Ile Leu Leu Gly
 145 150 155 160
 Leu Phe Ser Glu Ala Val Ile Leu Asp Trp Gly Ala Ala Val Ala Cys
 165 170 175
 Gly Glu Glu Glu Asp Leu Leu Asp Ile Asp Val Ser Lys Glu Glu Val
 180 185 190
 Leu Ser Ser Arg Met Thr Ile Pro Gly Arg Ile Val Gly Thr Pro Asp
 195 200 205
 Tyr Met Ala Pro Glu Arg Leu Leu Gly His Pro Ala Ser Lys Ser Thr
 210 215 220
 Asp Ile Tyr Ala Leu Gly Val Val Leu Tyr Gln Met Leu Thr Leu Ser
 225 230 235 240
 Phe Pro Tyr Arg Arg Lys Lys Gly Lys Lys Ile Val Leu Asp Gly Gln
 245 250 255
 Arg Ile Pro Ser Pro Gln Glu Val Ala Pro Tyr Arg Glu Ile Pro Pro
 260 265 270
 Phe Leu Ser Ala Val Val Met Arg Met Leu Ala Val Asp Pro Gln Glu
 275 280 285
 Arg Tyr Ser Ser Val Thr Glu Leu Lys Glu Asp Ile Glu Ser His Leu
 290 295 300
 Lys Gly Ser Pro Lys Trp Thr Leu Thr Thr Ala Leu Pro Pro Lys Lys
 305 310 315 320
 Ser Ser Ser Trp Lys Leu Asn Glu Pro Ile Leu Leu Ser Lys Tyr Phe
 325 330 335
 Pro Met Leu Glu Val Ser Pro Ala Ser Trp Tyr Ser Leu Ala Ile Ser
 340 345 350
 Asn Ile Glu Ser Phe Ser Glu Met Arg Leu Glu Tyr Thr Leu Ser Lys
 355 360 365
 Lys Gly Leu Asn Glu Gly Phe Gly Ile Leu Leu Pro Thr Ser Glu Asn
 370 375 380
 Ala Leu Gly Gly Asp Phe Tyr Gln Gly Tyr Gly Phe Trp Leu His Ile
 385 390 395 400
 Lys Glu Arg Thr Leu Ser Val Ser Leu Val Lys Asn Ser Leu Glu Ile
 405 410 415
 Gln Arg Cys Ser Gln Asp Leu Glu Ser Asp Lys Glu Thr Phe Leu Ile
 420 425 430
 Ala Leu Glu Gln His Asn His Ser Leu Ser Leu Phe Val Asp Gly Thr
 435 440 445
 Thr Trp Leu Ile His Met Asn Tyr Leu Pro Ser Arg Ser Gly Arg Val
 450 455 460
 Ala Ile Ile Val Arg Asp Met Glu Asp Ile Leu Glu Asp Ile Gly Ile
 465 470 475 480
 Phe Glu Ser Ser Gly Ser Leu Arg Val Ser Cys Leu Ala Val Pro Asp
 485 490 495
 Ala Phe Leu Ala Glu Lys Leu Tyr Asp Arg Ala Leu Val Leu Tyr Arg
 500 505 510
 Arg Ile Ala Glu Ser Phe Pro Gly Arg Lys Glu Gly Tyr Glu Ala Arg
 515 520 525
 Phe Arg Ala Gly Ile Thr Val Leu Glu Lys Ala Ser Thr Asp Asn Asn
 530 535 540
 Glu Gln Glu Phe Ala Leu Ala Ile Glu Glu Phe Ser Lys Leu His Asp
 545 550 555 560

Gly Val Ala Ala Pro Leu Glu Tyr Leu Gly Lys Ala Leu Val Tyr Gln
 565 570 575
 Arg Leu Gln Glu Tyr Asn Glu Glu Ile Lys Ser Leu Leu Leu Ala Leu
 580 585 590
 Lys Arg Tyr Ser Gln His Pro Glu Ile Phe Arg Leu Lys Asp His Val
 595 600 605
 Val Tyr Arg Leu His Glu Ser Phe Tyr Lys Arg Asp Arg Leu Ala Leu
 610 615 620
 Val Phe Met Ile Leu Val Leu Glu Ile Ala Pro Gln Ala Ile Thr Pro
 625 630 635 640
 Gly Gln Glu Glu Lys Ile Leu Val Trp Leu Lys Asp Lys Ser Arg Ala
 645 650 655
 Thr Leu Phe Cys Leu Leu Asp Pro Thr Val Leu Glu Leu Arg Ser Ser
 660 665 670
 Lys Met Glu Leu Phe Leu Ser Tyr Trp Ser Gly Phe Ile Pro His Leu
 675 680 685
 Asn Ser Leu Phe His Arg Ala Trp Asp Gln Ser Asp Val Arg Ala Leu
 690 695 700
 Ile Glu Ile Phe Tyr Val Ala Cys Asp Leu His Lys Trp Gln Phe Leu
 705 710 715 720
 Ser Ser Cys Ile Asp Ile Phe Lys Glu Ser Leu Glu Asp Gln Lys Ala
 725 730 735
 Thr Glu Glu Ile Val Glu Phe Ser Phe Glu Asp Leu Gly Ala Phe Leu
 740 745 750
 Phe Ala Ile Gln Ser Ile Phe Asn Lys Glu Asp Ala Glu Lys Ile Phe
 755 760 765
 Val Ser Asn Asp Gln Leu Ser Pro Ile Leu Leu Val Tyr Ile Phe Asp
 770 775 780
 Leu Phe Ala Asn Arg Ala Leu Leu Glu Ser Gln Gly Glu Ala Ile Phe
 785 790 795 800
 Gln Ala Leu Asp Leu Ile Arg Ser Lys Val Pro Glu Asn Phe Tyr His
 805 810 815
 Asp Tyr Leu Arg Asn His Glu Ile Arg Ala His Leu Trp Cys Arg Asn
 820 825 830
 Glu Lys Ala Leu Ser Thr Ile Phe Glu Asn Tyr Thr Glu Lys Gln Leu
 835 840 845
 Lys Asp Glu Gln His Glu Leu Phe Val Leu Tyr Gly Cys Tyr Leu Ala
 850 855 860
 Leu Ile Gln Gly Ala Glu Ala Ala Lys Gln His Phe Asp Val Cys Arg
 865 870 875 880
 Glu Asp Arg Ile Phe Pro Ala Ser Leu Leu Ala Arg Asn Tyr Asn Arg
 885 890 895
 Leu Gly Leu Pro Lys Asp Ala Leu Ser Tyr Gln Glu Arg Arg Leu Leu
 900 905 910
 Leu Arg Gln Lys Phe Leu Tyr Phe His Cys Leu Gly Asn His Asp Glu
 915 920 925
 Arg Asp Leu Cys Gln Thr Met Tyr His Leu Leu Thr Glu Glu Phe Gln
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 Leu
 945
 <210>113
 <211>1826
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>113
 Met Lys Ser Leu Pro Val Tyr Val Ser Gly Ile Lys Val Arg Asn Leu
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 Lys Asn Val Ser Ile His Phe Asn Ser Glu Glu Ile Val Leu Leu Thr
 20 25 30
 Gly Val Ser Gly Ser Gly Lys Ser Ser Ile Ala Phe Asp Thr Leu Tyr
 35 40 45
 Ala Ala Gly Arg Lys Arg Tyr Ile Ser Thr Leu Pro Thr Phe Phe Ala
 50 55 60
 Thr Thr Ile Thr Thr Leu Pro Asn Pro Lys Val Glu Glu Ile His Gly

65 70 75 80
 Leu Ser Pro Thr Ile Ala Ile Lys Gln Asn His Phe Ser His Tyr Ser
 85 90 95
 His Ala Thr Val Gly Ser Thr Thr Glu Leu Phe Ser His Leu Ala Leu
 100 105 110
 Leu Phe Thr Leu Glu Gly Gln Ala Arg Asp Pro Lys Thr Lys Glu Val
 115 120 125
 Leu Asp Leu Tyr Ser Lys Glu Lys Val Leu Ser Thr Ile Met Glu Leu
 130 135 140
 Ser Glu Gly Val Gln Ile Ser Ile Leu Ala Pro Leu Leu Arg Lys Asp
 145 150 155 160
 Ile Ala Ala Ile His Glu Tyr Ala Gln Gln Gly Phe Thr Lys Val Arg
 165 170 175
 Cys Asn Gly Thr Ile His Pro Ile Tyr Ser Phe Leu Thr Ser Gly Ile
 180 185 190
 Pro Glu Asp Cys Ser Val Asp Ile Val Ile Asp Thr Leu Ile Lys Ser
 195 200 205
 Glu Asn Asn Ile Ala Arg Leu Lys Val Ser Leu Phe Thr Ala Leu Glu
 210 215 220
 Phe Gly Glu Gly His Cys Ser Val Leu Ser Asp Glu Glu Leu Met Thr
 225 230 235 240
 Phe Ser Thr Lys Gln Ile Asp Asp Val Thr Tyr Thr Pro Leu Thr
 245 250 255
 Gln Gln Leu Phe Ser Pro His Ala Leu Glu Ser Arg Cys Ser Leu Cys
 260 265 270
 Gln Gly Ser Gly Ile Phe Ile Ser Ile Asp Asn Pro Leu Leu Ile Asp
 275 280 285
 Glu Asn Leu Ser Ile Lys Glu Asn Cys Cys Ser Phe Ala Gly Asn Cys
 290 295 300
 Ser Ser Tyr Leu Tyr His Thr Ile Tyr Gln Ala Leu Ala Asp Ala Leu
 305 310 315 320
 Asn Phe Asn Leu Glu Thr Pro Trp Lys Asp Leu Ser Pro Glu Ile Gln
 325 330 335
 Asn Ile Phe Leu Arg Gly Lys Asn Asn Leu Val Leu Pro Val Arg Leu
 340 345 350
 Phe Asp Gln Thr Leu Gly Lys Lys Asn Leu Thr Tyr Lys Val Trp Arg
 355 360 365
 Gly Val Leu Asn Asp Ile Gly Asp Lys Val Arg Tyr Thr Thr Lys Pro
 370 375 380
 Ser Arg Tyr Leu Ser Lys Gly Met Ser Ala His Ser Cys Ser Leu Cys
 385 390 395 400
 Lys Gly Thr Gly Leu Gly Asp Tyr Ala Ser Val Ala Thr Trp Glu Gly
 405 410 415
 Lys Thr Phe Thr Glu Phe Gln Gln Met Ser Leu Asn Asn Trp His Val
 420 425 430
 Phe Phe Ser Lys Val Lys Ser Pro Ser Leu Ser Ile Gln Glu Ile Leu
 435 440 445
 Gln Gly Leu Lys Gln Arg Leu Ser Phe Leu Ile Asp Leu Gly Leu Gly
 450 455 460
 Tyr Leu Thr Pro Asn Arg Ala Leu Ala Thr Leu Ser Gly Gly Glu Gln
 465 470 475 480
 Glu Arg Thr Ala Ile Ala Lys His Leu Gly Gly Glu Leu Phe Gly Ile
 485 490 495
 Thr Tyr Ile Leu Asp Glu Pro Ser Ile Gly Leu His Pro Gln Asp Thr
 500 505 510
 Glu Lys Leu Ile Gly Val Ile Lys Lys Leu Arg Asp Gln Gly Asn Thr
 515 520 525
 Val Ile Leu Val Glu His Glu Glu Arg Met Ile Ser Leu Ala Asp Arg
 530 535 540
 Ile Ile Asp Ile Gly Pro Gly Ala Gly Ile Phe Gly Gly Glu Val Leu
 545 550 555 560
 Phe Asn Gly Lys Pro Glu Asp Phe Leu Met Asn Ser Ser Ser Leu Thr
 565 570 575
 Ala Lys Tyr Leu Arg Gln Glu Leu Thr Ile Pro Ile Pro Glu Ser Arg

580 585 590
 Glu Ala Pro Thr Ser Trp Leu Leu Leu Thr Glu Ala Thr Ile His Asn
 595 600 605
 Leu Lys Asn Leu Ser Ile Arg Leu Pro Leu Ala Arg Leu Ile Gly Val
 610 615 620
 Thr Gly Val Ser Gly Ser Gly Lys Ser Ser Leu Ile Asn Asn Thr Leu
 625 630 635 640
 Val Pro Ala Ile Glu Ser Phe Leu Lys Gln Glu Asn Pro Lys Asn Leu
 645 650 655
 His Phe Glu Trp Gly Cys Ile Gly Arg Leu Ile His Ile Thr Arg Asp
 660 665 670
 Leu Pro Gly Arg Ser Gln Arg Ser Ile Pro Leu Thr Tyr Ile Lys Ala
 675 680 685
 Phe Asp Asp Ile Arg Glu Leu Phe Ala Ser Gln Pro Arg Ser Leu Arg
 690 695 700
 Gln Gly Leu Thr Lys Ala His Phe Ser Phe Asn Gln Pro Gln Gly Ala
 705 710 715 720
 Cys Ile Gln Cys Gln Gly Leu Gly Thr Met Thr Ile Ser Asp Asp Asp
 725 730 735
 Thr Pro Ile Pro Cys Ser Glu Cys Gln Gly Lys Arg Tyr His Ser Glu
 740 745 750
 Val Leu Glu Ile Leu Tyr Glu Gly Lys Asn Ile Ala Asp Ile Leu Asp
 755 760 765
 Met Thr Ala Tyr Glu Ala Glu Lys Phe Phe Ile Ser His Pro Lys Ile
 770 775 780
 His Glu Lys Ile His Ala Leu Cys Ser Leu Arg Leu Asp Tyr Leu Pro
 785 790 795 800
 Leu Gly Arg Pro Leu Ser Thr Leu Ser Gly Gly Glu Ile Gln Arg Leu
 805 810 815
 Lys Leu Ala His Glu Leu Leu Phe Ala Ser Pro Lys Gln Thr Leu Tyr
 820 825 830
 Val Leu Asp Glu Pro Thr Thr Gly Leu His Thr His Asp Ile Gln Ala
 835 840 845
 Leu Ile Glu Val Leu Leu Ser Leu Thr Tyr Leu Gly His Thr Val Leu
 850 855 860
 Val Ile Glu His Asn Met His Val Val Lys Val Cys Asp Tyr Val Leu
 865 870 875 880
 Glu Leu Gly Pro Glu Gly Gly Asp Leu Gly Gly Tyr Leu Leu Ala Ser
 885 890 895
 Cys Thr Pro Lys Asp Leu Ile Gln Leu Asn Thr Pro Thr Ala Lys Ala
 900 905 910
 Leu Ala Pro Tyr Ile Glu Gly Ser Leu Asp Ile Pro Val Val Lys Ser
 915 920 925
 Glu Pro Pro Ser Ser Pro Lys Ser Cys Asp Ile Leu Ile Lys Asp Ala
 930 935 940
 Tyr Gln Asn Asn Leu Lys His Ile Asp Leu Ala Leu Pro Arg Asn Ser
 945 950 955 960
 Leu Ile Ala Ile Ala Gly Pro Gly Ala Ser Gly Lys His Ser Leu Val
 965 970 975
 Phe Asp Ile Leu Tyr Ala Ser Gly Asn Ile Ala Tyr Ala Glu Leu Phe
 980 985 990
 Pro Pro Tyr Ile Arg Gln Gly Leu Leu Lys Glu Thr Pro Leu Pro Ser
 995 1000 1005
 Val Gly Glu Val Lys Gly Leu Ser Pro Val Ile Ser Val Arg Lys Cys
 1010 1015 1020
 Ser Ser Ser Asn Arg Ser Tyr His Thr Ile Ala Ser Ala Leu Gly Leu
 1025 1030 1035 1040
 Ser Asn Gly Leu Glu Lys Leu Phe Ala Ile Leu Gly Glu Pro Phe Ser
 1045 1050 1055
 Pro Leu Thr Glu Glu Lys Leu Ser Lys Thr Thr Pro Gln Thr Ile Ile
 1060 1065 1070
 Asp Ser Leu Leu Lys Ser Tyr Lys Asp Asp Tyr Val Thr Ile Thr Ser
 1075 1080 1085
 Pro Ile Pro Leu Gly Ser Asp Leu Glu Ile Phe Leu Gln Glu Lys Gln

1090 1095 1100
 Lys Glu Gly Phe Ile Lys Leu Tyr Ser Glu Gly Asn Leu Tyr Asp Leu
 1105 1110 1115 1120
 Asp Glu Arg Leu Pro Leu Asn Leu Ile Glu Pro Ala Ile Val Ile Gln
 1125 1130 1135
 His Thr Lys Val Ser Pro Lys Asn Ser Ser Ser Leu Leu Ser Ala Ile
 1140 1145 1150
 Ser Val Ala Phe Ser Leu Ser Ser Glu Ile Trp Ile Tyr Ile Ser Gln
 1155 1160 1165
 Lys Lys Gln Arg Lys Leu Ser Tyr Ser Leu Gly Trp Lys Asp Lys Lys
 1170 1175 1180
 Gly Arg Leu Tyr Pro Glu Ile Thr His Gln Leu Leu Xaa Ser Asp His
 1185 1190 1195 1200
 Pro Glu Gly Arg Cys Leu Thr Cys Gly Gly Arg Gly Glu Ile Leu Lys
 1205 1210 1215
 Ile Ser Leu Glu Glu His Lys Glu Lys Ile Ala His Tyr Thr Pro Leu
 1220 1225 1230
 Glu Phe Phe Ser Leu Phe Phe Pro Lys Ser Tyr Met Lys Pro Val Gln
 1235 1240 1245
 Lys Leu Leu Lys Asp Glu Asn Ala Ser Gln Pro Leu Lys Leu Leu Thr
 1250 1255 1260
 Thr Lys Glu Phe Leu Asn Phe Cys Arg Gly Ser Ser Glu Phe Pro Gly
 1265 1270 1275 1280
 Met Asn Ala Leu Leu Met Glu Gln Leu Asp Thr Glu Ser Asp Ser Pro
 1285 1290 1295
 Leu Ile Lys Pro Leu Leu Ala Leu Thr Ser Cys Pro Ala Cys Lys Gly
 1300 1305 1310
 Ser Gly Leu Asn Asp Tyr Ala Asn Tyr Val Arg Ile Asn Asn Thr Ser
 1315 1320 1325
 Leu Leu Asp Ile Tyr Gln Glu Asp Ala Thr Phe Leu Glu Ser Phe Leu
 1330 1335 1340
 Asn Thr Ile Gly Thr Asp Asp Thr Arg Ser Ile Ile Gln Asp Leu Met
 1345 1350 1355 1360
 Asn Arg Leu Thr Phe Ile Ser Lys Val Gly Leu Ser Tyr Ile Thr Leu
 1365 1370 1375
 Gly Gln Arg Gln Asp Thr Leu Ser Asp Gly Glu Asn Tyr Arg Leu His
 1380 1385 1390
 Leu Ala Lys Lys Ile Ser Ile Asn Leu Thr Asn Ile Val Tyr Leu Phe
 1395 1400 1405
 Glu Glu Pro Leu Ser Gly Leu His Pro Gln Asp Leu Pro Thr Ile Val
 1410 1415 1420
 Gln Leu Leu Lys Glu Leu Val Ala Asn Asn Asn Thr Val Ile Ala Thr
 1425 1430 1435 1440
 Asp Arg Ser Cys Ser Leu Ile Pro His Ala Asp His Ala Ile Phe Leu
 1445 1450 1455
 Gly Pro Gly Ser Gly Pro Gln Gly Gly Phe Leu Met Asp Ser Asp Thr
 1460 1465 1470
 Glu Val Cys Pro Ser Val Asp Leu His Ala Asn Val Pro Gln Thr Glu
 1475 1480 1485
 Val Cys Pro Lys Ala Pro Leu Ser Ile Ser Lys Ala Asn His Thr Arg
 1490 1495 1500
 Gly Ser Asp Arg Thr Leu Lys Val Asn Leu Ser Ile His His Ile Gln
 1505 1510 1515 1520
 Asn Leu Lys Val Ser Ala Pro Leu His Ala Leu Val Ala Ile Gly Gly
 1525 1530 1535
 Val Ser Gly Ser Gly Lys Thr Ser Leu Leu Glu Gly Phe Lys Lys
 1540 1545 1550
 Gln Ala Glu Leu Leu Ile Ala Lys Gly Thr Thr Thr Phe Ser Asp Leu
 1555 1560 1565
 Val Val Ile Asp Ser His Pro Ile Ala Ser Ser Gln Arg Ser Asp Ile
 1570 1575 1580
 Ser Thr Tyr Phe Asp Ile Ala Pro Ser Leu Arg Ala Phe Tyr Ala Ser
 1585 1590 1595 1600
 Leu Thr Gln Ala Lys Ala Leu Asn Ile Ser Ser Thr Met Phe Ser Thr

1605 1610 1615
 Asn Thr Lys Gln Gly Gln Cys Ser Asp Cys Gln Gly Leu Gly Tyr Gln
 1620 1625 1630
 Trp Ile Asp Arg Ala Phe Tyr Ala Leu Glu Lys Arg Pro Cys Pro Thr
 1635 1640 1645
 Cys Ser Gly Phe Arg Ile Gln Pro Leu Ala Gln Glu Val Leu Tyr Glu
 1650 1655 1660
 Gly Lys His Phe Gly Glu Leu Leu His Thr Pro Ile Glu Thr Val Ala
 1665 1670 1675 1680
 Leu Arg Phe Pro Phe Ile Lys Lys Ile Gln Lys Pro Leu Lys Ala Leu
 1685 1690 1695
 Leu Asp Ile Gly Leu Gly Tyr Leu Pro Ile Gly Gln Lys Leu Ser Ser
 1700 1705 1710
 Leu Ser Val Ser Glu Lys Thr Ala Leu Lys Thr Ala Tyr Phe Leu Tyr
 1715 1720 1725
 Gln Thr Pro Glu Thr Pro Thr Leu Phe Leu Ile Asp Glu Leu Phe Ser
 1730 1735 1740
 Ser Leu Asp Pro Ile Lys Lys Gln His Leu Pro Glu Lys Leu Arg Ser
 1745 1750 1755 1760
 Leu Ile Asn Ser Gly His Ser Val Ile Tyr Ile Asp His Asp Val Lys
 1765 1770 1775
 Leu Leu Lys Ser Ala Asp Tyr Leu Ile Glu Ile Gly Pro Gly Ser Gly
 1780 1785 1790
 Lys Gln Gly Gly Lys Leu Leu Phe Ser Gly Ser Pro Lys Asp Ile Tyr
 1795 1800 1805
 Ala Ser Lys Asp Ser Leu Leu Lys Lys Tyr Ile Cys Asn Glu Glu Leu
 1810 1815 1820
 Asp Ser
 1825
 <210>114
 <211>486
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>114
 Asp Ser Met Ile Thr Arg Thr Lys Ile Ile Cys Thr Ile Gly Pro Ala
 1 5 10 15
 Thr Asn Ser Pro Glu Met Leu Ala Lys Leu Leu Asp Ala Gly Met Asn
 20 25 30
 Val Ala Arg Leu Asn Phe Ser His Gly Ser His Glu Thr His Gly Gln
 35 40 45
 Ala Ile Gly Phe Leu Lys Glu Leu Arg Glu Gln Lys Arg Val Pro Leu
 50 55 60
 Ala Ile Met Leu Asp Thr Lys Gly Pro Glu Ile Arg Leu Gly Asn Ile
 65 70 75 80
 Pro Gln Pro Ile Ser Val Ser Gln Gly Gln Lys Leu Arg Leu Val Ser
 85 90 95
 Ser Asp Ile Asp Gly Ser Ala Glu Gly Gly Val Ser Leu Tyr Pro Lys
 100 105 110
 Gly Ile Phe Pro Phe Val Pro Glu Gly Ala Asp Val Leu Ile Asp Asp
 115 120 125
 Gly Tyr Ile His Ala Val Val Val Ser Ser Glu Ala Asp Ser Leu Glu
 130 135 140
 Leu Glu Phe Met Asn Ser Gly Leu Leu Lys Ser His Lys Ser Leu Ser
 145 150 155 160
 Ile Arg Gly Val Asp Val Ala Leu Pro Phe Met Thr Glu Lys Asp Ile
 165 170 175
 Ala Asp Leu Lys Phe Gly Val Glu Gln Asn Met Asp Val Val Ala Ala
 180 185 190
 Ser Phe Val Arg Tyr Gly Glu Asp Ile Glu Thr Met Arg Lys Cys Leu
 195 200 205
 Ala Asp Leu Gly Asn Pro Lys Met Pro Ile Ile Ala Lys Ile Glu Asn
 210 215 220
 Arg Leu Gly Val Glu Asn Phe Ser Lys Ile Ala Lys Leu Ala Asp Gly
 225 230 235 240

Ile Met Ile Ala Arg Gly Asp Leu Gly Ile Glu Leu Ser Val Val Glu
 245 250 255
 Val Pro Asn Leu Gln Lys Met Met Ala Lys Val Ser Arg Glu Thr Gly
 260 265 270
 His Phe Cys Val Thr Ala Thr Gln Met Leu Glu Ser Met Ile Arg Asn
 275 280 285
 Val Leu Pro Thr Arg Ala Glu Val Ser Asp Ile Ala Asn Ala Ile Tyr
 290 295 300
 Asp Gly Ser Ser Ala Val Met Leu Ser Gly Glu Thr Ala Ser Gly Ala
 305 310 315 320
 His Pro Val Ala Ala Val Lys Ile Met Arg Ser Val Ile Leu Glu Thr
 325 330 335
 Glu Lys Asn Leu Ser His Asp Ser Phe Leu Lys Leu Asp Glu Ser Asn
 340 345 350
 Ser Ala Leu Gln Val Ser Pro Tyr Leu Ser Ala Ile Gly Leu Ala Gly
 355 360 365
 Ile Gln Ile Ala Glu Arg Ala Asp Ala Lys Ala Leu Ile Val Tyr Thr
 370 375 380
 Glu Ser Gly Ser Ser Pro Met Phe Leu Ser Lys Tyr Arg Pro Lys Phe
 385 390 395 400
 Pro Ile Ile Ala Val Thr Pro Ser Thr Ser Val Tyr Tyr Arg Leu Ala
 405 410 415
 Leu Glu Trp Gly Val Tyr Pro Met Leu Thr Gln Glu Ser Asp Arg Ala
 420 425 430
 Val Trp Arg His Gln Ala Cys Ile Tyr Gly Ile Glu Gln Gly Ile Leu
 435 440 445
 Ser Asn Tyr Asp Arg Ile Leu Val Leu Ser Arg Gly Ala Cys Met Glu
 450 455 460
 Glu Thr Asn Asn Leu Thr Leu Thr Ile Val Asn Asp Ile Leu Thr Gly
 465 470 475 480
 Ser Glu Phe Pro Glu Thr
 485

<210>115

<211>463

<212>PRT

<213>Chlamydia pneumoniae

<400>115

Leu Val Gly Lys Lys Phe His Gln Ile Lys Arg Thr Ile Leu Glu Ala
 1 5 10 15
 Pro Leu Tyr Tyr Leu Val Ser Gly Ile Ile Ala Leu Cys Arg His Thr
 20 25 30
 Pro Arg Ser Phe Leu Thr Gly Leu Gly Lys Gly Phe Gly Phe Leu Ala
 35 40 45
 Phe Tyr Ile Ile Ser Asp Tyr Arg Lys Thr Ala Leu Thr Asn Leu Ala
 50 55 60
 Leu Ala Phe Pro Glu Lys Thr Phe Asp Glu Arg Tyr Lys Ile Ala Arg
 65 70 75 80
 Gln Ser Leu Gln His Leu Ile Ile Thr Leu Leu Glu Leu Leu Ala Ile
 85 90 95
 Glu Gln Leu Val Gly Asn Ile Asp Lys Leu Ile Thr Ile Val Thr Ser
 100 105 110
 Ser Arg Asn Pro Lys Gly Phe Ser Ser Glu Glu Val Ile Ser Asn Glu
 115 120 125
 Asp Leu Glu Glu Thr Phe Lys Asn Leu Gln Glu Lys Gln Gly Leu Ile
 130 135 140
 Leu Phe Cys Gly His Gln Ala Asn Trp Glu Leu Pro Phe Leu Tyr Ile
 145 150 155 160
 Thr Lys Asn Tyr Pro Gly Ile Ala Phe Ala Lys Ala Ile Lys Asn Gln
 165 170 175
 Arg Leu Ser Lys Lys Ile Phe Ala Leu Arg Glu Val Phe Lys Gly Lys
 180 185 190
 Ile Val Pro Pro Lys Asn Gly Ile Gln Gln Gly Ile Glu Ala Leu Asn
 195 200 205
 Gln Gly Lys Leu Val Gly Ile Val Gly Asp Gln Ala Leu Leu Met Ser

210 215 220
 Ser Tyr Thr Tyr Pro Leu Phe Gly Ser Pro Ala Phe Thr Thr Thr Ser
 225 230 235 240
 Pro Ala Leu Leu Ala Tyr Lys Thr Gly Phe Pro Val Ile Ala Val Asn
 245 250 255
 Val Ser Arg Gln Ala Lys Gly Phe Glu Val Ile Pro Ser Ala Lys Leu
 260 265 270
 Tyr Ala Asn Lys Ser Leu Pro Met Lys Glu Ser Val Ala Ile Leu Met
 275 280 285
 Asp Gln Met Met Gly Phe Leu Glu Lys Gly Ile Ala Ser Gln Pro Glu
 290 295 300
 Gln Trp Met Trp Ile His Lys Arg Trp Lys Arg Lys Ile Ser Asn Val
 305 310 315 320
 Ile Lys Lys Lys Tyr Arg Tyr Ser His Ile Leu Val Phe Val Asp Gln
 325 330 335
 Val Ser Ser His Phe Ser Phe Leu Lys Ala Leu Ala Glu Cys Phe Ser
 340 345 350
 Gly Thr Thr Leu His Leu Thr Leu Gly Asn Ala Asp His Leu Glu Glu
 355 360 365
 Leu Gln Glu Gln Phe Pro Glu Tyr Ser Leu Ile Gln Leu Arg Asn Asp
 370 375 380
 Gln Asp Ile Leu Ala Leu Pro Asn Cys Tyr Pro Ala Ile Phe Asp Leu
 385 390 395 400
 Thr Asn Asn Leu Gln His Leu Tyr Lys His Phe Arg Lys Thr Gly Ser
 405 410 415
 Cys Ala Val Tyr Ser Lys Arg Phe Leu Glu Lys Ser Leu Asp His Pro
 420 425 430
 Gln Ala Pro Leu Lys Asn Ser Leu Arg Ile Phe Tyr Ser Lys Asn Leu
 435 440 445
 Lys Asp Lys Glu Arg Lys Asn Phe Lys Val Lys Ser Lys Gly Pro
 450 455 460

<210>116

<211>114

<212>PRT

<213>Chlamydia pneumoniae

<400>116

Ile Ile Leu Leu Cys Phe Leu Leu Ser Gln Asp Phe Ser Phe Cys Ser
 1 5 10 15
 Glu Asp Ala Pro Glu Arg Asn Met Leu Asn Ser Ile Val Thr Lys Arg
 20 25 30
 Thr Arg Thr Ala Ala Thr Leu Leu Ile Pro Lys Val Ile Pro Glu Ala
 35 40 45
 Pro Ser Thr Pro Val Gln Ile Lys Met Ile Ser Ile Lys Glu Thr Ile
 50 55 60
 Ala Val Arg Ala Lys Ser Pro Ala Asp Thr Val Ala Thr Phe Ala Leu
 65 70 75 80
 Asp Ser Glu Leu Ser Glu Gln Gln Gln Thr Val Leu Ile Ala Ala Ser
 85 90 95
 Lys Pro Trp Pro Lys Gln Ser Ile Lys His Ile Lys Phe Pro Leu Thr
 100 105 110
 Lys Phe

<210>117

<211>104

<212>PRT

<213>Chlamydia pneumoniae

<400>117

Asn Leu Val Arg Gly Asn Phe Met Cys Leu Ile Asp Cys Leu Gly Gln
 1 5 10 15
 Gly Phe Glu Ala Ala Ile Asn Thr Val Cys Cys Cys Ser Asp Ser Ser
 20 25 30
 Glu Ser Lys Ala Asn Val Ala Thr Val Ser Ala Gly Leu Leu Ala Leu
 35 40 45
 Thr Ala Ile Val Ser Phe Ile Leu Ile Ile Leu Ile Cys Thr Gly Val

WO 99/27105

PCT/IB98/01890

50 55 60
 Leu Gly Ala Ser Gly Met Thr Phe Gly Met Ser Asn Val Ala Ala Val
 65 70 75 80
 Leu Val Leu Leu Val Thr Ile Leu Leu Ser Met Phe Leu Ser Gly Ala
 85 90 95
 Ser Ser Leu Gln Asn Glu Lys Ser
 100
 <210>118
 <211>434
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>118
 Arg Thr Gln Lys Lys Thr Phe Ile Leu Leu Asp Leu Glu Thr Met Ile
 1 5 10 15
 Lys Phe Leu Ser Gln Leu Phe Ile Arg His Trp Pro Arg Lys Val Val
 20 25 30
 Ser Leu Gly Phe Ala Ile Ile Ile Trp Ile Leu Val Gly Gln Ser Val
 35 40 45
 Thr Ile Thr Arg Thr Leu Thr Asn Val Pro Val Arg Ile Val Asp Leu
 50 55 60
 His Pro Asp Gln Thr Val Leu Gly Leu Gln Lys Ser Gly Phe Leu Asn
 65 70 75 80
 Lys Lys Val Ser Leu Thr Ile Thr Gly Asn Lys Asn Thr Val Gln Asp
 85 90 95
 Leu Arg Pro Ser Asn Leu Glu Val Val Ile Ser Ala Ala Asn His Thr
 100 105 110
 Glu Ser Trp Ile Ala Thr Ile Asp Lys His Asn Leu Val Ser Val Asp
 115 120 125
 His Glu Ile Asn Ile Arg Lys Asp Ile His Ser Val Asp Ala Asn Asp
 130 135 140
 Ile Phe Val Arg Leu Thr Gln Tyr Val Thr Glu Asp Ile Leu Leu Thr
 145 150 155 160
 Ile Thr Lys Pro Ile Gly Ser Pro Pro Lys Gly Tyr Glu Tyr Leu Asp
 165 170 175
 Val Trp Pro Lys Tyr Leu Asn Gln Lys Val Ser Gly Pro Lys Glu Tyr
 180 185 190
 Ile Asn Ala Leu Lys Glu Gln Gly Leu Glu Leu Thr Phe Asn Leu Asn
 195 200 205
 Lys Ile Ser Phe Glu Glu Leu Glu Arg Asn Arg Ile Ala Gln Gly Ser
 210 215 220
 His Asp Glu Ile Ile Phe Pro Ile Pro Lys Glu Trp Lys Lys Ile Leu
 225 230 235 240
 Ile Pro Phe Glu Asn Thr Phe Met Asp Leu Asn Asp Pro Gln Ala Asp
 245 250 255
 Phe Leu Arg Leu Leu Phe Leu Lys Arg Glu Cys Ile Pro Leu Asn Leu
 260 265 270
 Asn Leu Pro Val Phe Leu Phe Phe Pro Val Thr Phe Ile Gln Thr Met
 275 280 285
 Asn Pro Leu Glu Tyr Ser Leu Asp Pro Val Pro Pro Ile Ile Leu Asn
 290 295 300
 His Gly Ile His Gln Ile Asn Ile Pro Leu Tyr Val Lys Asp Val Ser
 305 310 315 320
 Arg Gln Phe Leu Asp Val Val Lys Asn Asn Met Val Leu Thr Ile Val
 325 330 335
 Met Pro Ser Pro Gln Asp Pro Ser Ser Ile Asn Trp Ala Ile Glu Phe
 340 345 350
 Leu Asp Glu Lys Thr Leu Glu Asn Thr Phe Leu Gln Thr Ile Ile Ala
 355 360 365
 Gln Glu His Gly Ile Leu His Asp Ile Ala Leu Ile Asp Glu Ala Gly
 370 375 380
 Ile Arg His Arg Phe Arg Glu Tyr Leu Arg Lys Leu Ala Leu Phe Thr
 385 390 395 400
 Ala Asp Gly Glu Pro Leu Asn Leu Ile Ala Glu Ile Lys Asn Asn Lys
 405 410 415

Val Val Ile Gln Thr Lys Thr Lys Glu Thr Thr Lys Leu Tyr Lys Lys
 420 425 430

Glu Trp

<210>119

<211>279

<212>PRT

<213>Chlamydia pneumoniae

<400>119

Leu Cys Asn Phe Ser Gln Tyr Thr Thr Gln Gly Pro Ser Lys Thr Met
 1 5 10 15
 Pro Phe Asp Ile Thr Tyr Tyr Thr Thr Pro Leu Leu Glu Ile Ile Leu
 20 25 30
 Ile Trp Val Met Leu Asn Tyr Leu Leu Lys Phe Phe Trp Gly Thr Arg
 35 40 45
 Ala Met Asp Val Val Phe Gly Leu Leu Ala Phe Leu Phe Leu Phe Val
 50 55 60
 Leu Ala Asp Lys Leu His Leu Pro Ile Ile Arg Arg Leu Met Leu His
 65 70 75 80
 Val Val Asn Ile Ala Ala Ile Val Val Phe Ile Ile Phe Gln Pro Glu
 85 90 95
 Ile Arg Leu Ala Leu Ser Arg Ile Arg Phe His Gly Lys Lys Phe Phe
 100 105 110
 Ile Asp Thr Gln Glu Gln Phe Val Glu Gln Leu Ala Ala Ser Ile Tyr
 115 120 125
 Gln Leu Ser Glu Arg Gln Ile Gly Ala Leu Val Val Leu Glu Asn Lys
 130 135 140
 Asp Ser Phe Asp Glu Tyr Leu Ser Phe Ser Ser Val Lys Ile Asn Ala
 145 150 155 160
 Thr Phe Ser Glu Glu Leu Leu Glu Thr Ile Phe Glu Pro Ser Ser Pro
 165 170 175
 Leu His Asp Gly Ala Val Ile Leu Arg Gly Asp Ile Leu Ala Tyr Ala
 180 185 190
 Arg Val Val Leu Pro Leu Ala His Asp Thr Thr Gln Leu Ser Arg Ser
 195 200 205
 Met Gly Thr Arg His Arg Ala Ala Leu Gly Ala Ser Gln Arg Ser Asp
 210 215 220
 Ala Leu Ile Ile Thr Val Ser Glu Glu Asn Gly Ser Val Ser Leu Ser
 225 230 235 240
 Arg Asp Gly Leu Leu Thr Arg Gly Val Lys Ile Asp Arg Phe Lys Ala
 245 250 255
 Val Leu Arg Ser Ile Leu Ser Pro Lys Glu His Lys Arg Lys Pro Leu
 260 265 270
 Phe Ser Trp Ile Trp Lys Arg
 275

<210>120

<211>448

<212>PRT

<213>Chlamydia pneumoniae

<400>120

Met Asp Ala Leu Ile Leu Ser Arg Ile Gln Phe Gly Leu Phe Ile Thr
 1 5 10 15
 Phe His Tyr Leu Phe Val Pro Leu Ser Met Gly Leu Ser Met Met Leu
 20 25 30
 Val Ile Met Glu Gly Leu Tyr Leu Val Thr Lys Lys Gln Ile Tyr Lys
 35 40 45
 Gln Met Thr Trp Phe Trp Val Gly Ile Phe Ala Leu Thr Phe Val Leu
 50 55 60
 Gly Val Val Thr Gly Ile Met Gln Ile Phe Ser Phe Gly Ser Asn Trp
 65 70 75 80
 Ala Asn Phe Ser Glu Tyr Thr Gly Asn Ile Phe Gly Thr Leu Leu Gly
 85 90 95
 Ser Glu Gly Val Phe Ala Phe Phe Leu Glu Ser Gly Phe Leu Gly Ile
 100 105 110

Leu Leu Phe Gly Arg His Lys Val Ser Lys Lys Met His Phe Phe Ser
 115 120 125
 Thr Cys Met Val Ala Leu Gly Ala His Met Ser Ala Phe Trp Ile Ile
 130 135 140
 Cys Ala Asn Ser Trp Met Gln Thr Pro Ser Gly Tyr Glu Met Val Met
 145 150 155 160
 His Lys Gly Lys Leu Ile Pro Ala Leu Thr Ser Phe Trp Gly Val Val
 165 170 175
 Phe Ser Pro Thr Thr Ile Asp Arg Phe Ile His Ala Val Leu Gly Thr
 180 185 190
 Trp Leu Ser Gly Val Phe Leu Val Ile Ser Val Ser Ala Tyr Tyr Leu
 195 200 205
 Trp Lys Lys Arg His His Glu Phe Ala Lys Gln Gly Met Lys Ile Gly
 210 215 220
 Thr Ile Cys Ala Val Ile Val Leu Val Leu Gln Leu Trp Ser Ala Asp
 225 230 235 240
 Val Thr Ala Arg Gly Val Ala Lys Asn Gln Pro Ala Lys Leu Ala Ala
 245 250 255
 Phe Glu Gly Ile Phe Lys Thr Glu Glu Tyr Thr Pro Ile Trp Ala Phe
 260 265 270
 Gly Tyr Val Asp Met Glu Lys Glu Arg Val Ile Gly Leu Pro Ile Pro
 275 280 285
 Gly Ala Leu Ser Phe Leu Val His Arg Asn Ile Lys Thr Pro Val Thr
 290 295 300
 Gly Leu Asp Gln Ile Pro Arg Asp Glu Trp Pro Asn Val Gln Ala Val
 305 310 315 320
 Phe Gln Leu Tyr His Leu Met Ile Met Leu Trp Gly Val Met Val Ala
 325 330 335
 Leu Thr Leu Ile Ser Trp Ser Ala Tyr Lys Gly Trp Arg Trp Ala Leu
 340 345 350
 Lys Pro Phe Phe Leu Val Ile Leu Thr Phe Ser Val Leu Leu Pro Glu
 355 360 365
 Ile Cys Asn Glu Cys Gly Trp Cys Ala Ala Glu Met Gly Arg Gln Pro
 370 375 380
 Trp Val Val Gln Gly Leu Leu Lys Thr Lys Asp Ala Val Ser Pro Ile
 385 390 395 400
 Val Gln Ala Asn Lys Ile Val Gln Ser Leu Val Ile Phe Ser Leu Val
 405 410 415
 Phe Ile Ala Leu Leu Thr Leu Phe Ile Thr Val Leu Cys Lys Lys Ile
 420 425 430
 Lys His Gly Pro Glu Glu Glu Asn Asp Leu Thr Glu Phe Glu Val Lys
 435 440 445

<210>121

<211>268

<212>PRT

<213>Chlamydia pneumoniae

<400>121

Met Glu Leu Ser Leu Thr Ser Leu Leu Pro Leu Ala Trp Tyr Val Ile
 1 5 10 15
 Leu Gly Val Ala Val Phe Ala Tyr Ser Phe Gly Asp Gly Phe Asp Leu
 20 25 30
 Gly Leu Gly Ala Val Tyr Leu Lys Ala Lys Glu Asp Lys Glu Arg Arg
 35 40 45
 Ile Leu Leu Asn Ser Ile Gly Pro Val Trp Asp Gly Asn Glu Val Trp
 50 55 60
 Leu Val Ile Ile Val Gly Gly Leu Phe Ala Gly Phe Pro Ala Cys Tyr
 65 70 75 80
 Ala Thr Leu Leu Ser Ile Phe Tyr Met Pro Ile Trp Thr Leu Val Leu
 85 90 95
 Leu Tyr Ile Phe Arg Gly Cys Ser Leu Glu Phe Arg Ser Lys Ser Glu
 100 105 110
 Ser Val Ser Trp Lys Ile Phe Trp Asp Ile Ile Phe Ile Cys Ser Gly
 115 120 125
 Thr Ala Ile Ser Phe Phe Leu Gly Thr Ile Val Gly Asn Leu Ile Leu

130 135 140
 Gly Leu Pro Leu Ser Pro Asp Thr Ser Tyr Ala Ser Leu Ser Trp Ile
 145 150 155 160
 Leu Phe Phe Arg Pro Tyr Ala Ala Leu Cys Gly Ala Val Val Ala Ser
 165 170 175
 Ala Phe Ala Thr His Gly Ser Phe Phe Ala Leu Met Lys Thr Ser Asp
 180 185 190
 Ser Leu Asn Ala Arg Ile Ala Gln Gln Phe Pro Tyr Ile Leu Ser Ser
 195 200 205
 Phe Leu Val Phe Tyr Val Leu Phe Leu Gly Ala Ser Leu Ile Ser Ile
 210 215 220
 Pro Lys Arg Phe Asp Ala Phe Pro Thr Tyr Pro Leu Leu Ile Leu Leu
 225 230 235 240
 Ile Ala Leu Thr Ser Cys Cys Cys Val Ala Ala Lys Thr Ser Val Ser
 245 250 255
 Lys Lys His Tyr Gly Thr His Leu Phe Ile Leu His
 260 265
 <210>122
 <211>403
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>122
 Glu Lys Ser Met Arg Met Leu Gln Ile Ser Met Leu Leu Leu Ala Leu
 1 5 10 15
 Gly Thr Ala Ile Asn Ser Pro Ala Ile Tyr Ala Ala Asp Ser Gln Ser
 20 25 30
 Val Ser Phe Pro Glu Gln Leu Pro Ser Ser Phe Thr Gly Glu Ile Lys
 35 40 45
 Gly Asn His Val Arg Met Arg Leu Ala Pro His Thr Asp Gly Thr Ile
 50 55 60
 Ile Arg Glu Phe Ser Lys Gly Asp Leu Val Ala Val Ile Gly Glu Ser
 65 70 75 80
 Lys Asp Tyr Tyr Val Ile Ser Ala Pro Pro Gly Ile Thr Gly Tyr Val
 85 90 95
 Phe Arg Ser Phe Val Leu Asp Asn Val Val Glu Gly Glu Gln Val Asn
 100 105 110
 Val Arg Leu Glu Pro Ser Thr Ser Ala Pro Val Leu Val Arg Leu Ser
 115 120 125
 Arg Gly Thr Gln Ile Gln Pro Ala Ser Gln Glu Pro His Gly Lys Trp
 130 135 140
 Leu Glu Val Val Leu Pro Ser Gln Cys Val Phe Tyr Val Ala Lys Asn
 145 150 155 160
 Phe Val Ala Asn Lys Gly Pro Ile Glu Leu Tyr Thr Gln Arg Glu Gly
 165 170 175
 Gln Lys Lys Ile Ala Met Asp Leu Ile Asn Ser Ala Leu Asn Phe Ala
 180 185 190
 His Ile Glu Leu Glu Lys Ser Leu Asn Glu Ile Asp Leu Glu Ala Ile
 195 200 205
 Tyr Lys Lys Ile Asn Leu Val Gln Ser Glu Glu Phe Lys Asp Val Pro
 210 215 220
 Gly Ile Gln Gly Leu Ile Gln Lys Ala Leu Glu Glu Ile Gln Asp Ala
 225 230 235 240
 Tyr Leu Ser Lys Ser Leu Glu Ser Gln Asn Thr Ser Ile Ala Ser Ser
 245 250 255
 Gln Cys Ser Thr Pro Lys Val Ser Ser Ser Glu Val Thr Thr Ser Leu
 260 265 270
 Leu Ser Arg His Ile Arg Lys Gln Thr Ala Leu Lys Thr Ala Pro Leu
 275 280 285
 Thr Gln Gly Arg Glu Asn Leu Glu Tyr Ser Leu Phe Arg Ile Trp Ala
 290 295 300
 Ser Met Gln Gln Gly Asn Asp His Ser Glu Ala Leu Thr Gln Glu Ala
 305 310 315 320
 Phe Tyr Arg Ala Glu Gln Lys Lys Lys Gln Val Leu Ala Gly Val Leu
 325 330 335

Glu Val Tyr Pro His Val Val Lys Asn Asn Pro Gly Asp Tyr Leu Leu
 340 345 350
 Lys Ala Gln Glu Asn Thr Ile Ala Phe Leu Tyr Gly Thr Ser Ile Asn
 355 360 365
 Leu Glu Gln Trp Leu Gly Lys Arg Val Thr Val Glu Cys Leu Pro Arg
 370 375 380
 Pro Asn Asn His Phe Ala Phe Pro Ala Tyr Tyr Val Val Gly Ile Lys
 385 390 395 400
 Glu Ala Ser

<210>123

<211>255

<212>PRT

<213>Chlamydia pneumoniae

<400>123

Tyr Val Pro Phe Arg Lys Phe Ser Asn Gln Asn Pro Met Leu Leu Ile
 1 5 10 15
 Tyr Cys Lys Lys Lys Glu Ile His Leu Gln Trp Pro Gln Thr Ala Lys
 20 25 30
 Ile Arg Phe Thr Pro Lys Ile Ala Met Lys Val Lys Ile Asn Asp Gln
 35 40 45
 Leu Ile Cys Ile Pro Pro Phe Ile Ser Ala Arg Trp Ser Gln Ile Ala
 50 55 60
 Phe Ile Glu Ser Gln Glu Gly Glu Asn Lys Asp Gln Gly Thr Leu Arg
 65 70 75 80
 Leu His Leu Ile Asp Gly Lys Ile Ile Ser Ile Pro Asn Leu Asp Gln
 85 90 95
 Ser Ile Ile Asp Ile Ala Phe Gln Glu His Leu Leu Tyr Leu Glu Thr
 100 105 110
 Ser Gln Ser Gly Lys Glu Asp Ser Arg Asp Asp Asp Lys Leu Gly Val
 115 120 125
 Gly Val Leu Met Asn Val Leu Gln Gln Ile Thr Lys Gly Asn Asp Ile
 130 135 140
 Gln Val Leu Pro Lys Asn Leu Ile Ser Pro Leu Phe Ser Gly Thr Asn
 145 150 155 160
 Pro Ile Glu Ala Ile Leu Gln His Thr Pro Glu His Lys Asp His Pro
 165 170 175
 Asp Ala Pro Thr Asp Val Leu Glu Lys Met Ala Asp Val Ile Arg Val
 180 185 190
 Leu Ser Gly Asn Asn Ala Thr Leu Leu Pro Arg Pro Glu Pro His Cys
 195 200 205
 Asn Cys Met His Cys Gln Ile Gly Arg Val Met Asn Glu Glu Asp Thr
 210 215 220
 Leu Ala Val Ser Asp Lys Asp Leu Thr Phe Arg Thr Trp Asp Ile Met
 225 230 235 240
 Gln Ser Gly Asp Lys Val Val Tyr Cys Asn Glu Ser Leu Lys Ser
 245 250 255

<210>124

<211>432

<212>PRT

<213>Chlamydia pneumoniae

<400>124

Val Arg Thr Gln Met Lys Lys Thr Met Val Ile Asp Thr Ser Val Phe
 1 5 10 15
 Ile Tyr Asp Pro Glu Ala Leu Phe Ser Phe Glu Asn Thr Arg Ile Ile
 20 25 30
 Ile Pro Phe Pro Val Ile Glu Glu Leu Glu Ala Phe Gly Lys Phe Arg
 35 40 45
 Asp Glu Ser Ala Lys Asn Ala Ser Arg Ala Leu Ser Asn Ile Arg Leu
 50 55 60
 Leu Leu Glu Asn Ala Lys Thr Lys Val Thr Asp Gly Val Leu Leu Pro
 65 70 75 80
 Ser Gly Ser Glu Leu Arg Ile Glu Val Ala Pro Leu Ser Asn Asp Asp
 85 90 95

Arg Arg Gly Lys Leu Leu Thr Leu Glu Leu Leu Lys Ile Ile Ala Lys
 100 105 110
 Arg Glu Pro Met Val Phe Val Thr Lys Ser Leu Gly Arg Arg Val Arg
 115 120 125
 Ala Glu Ala Leu Gln Ile Glu Ser Arg Asp Tyr Glu Ser Lys Arg Phe
 130 135 140
 Ser Phe Arg Ser Leu Tyr Arg Gly Phe Arg Glu Leu Gln Val Ser Gln
 145 150 155 160
 Glu Asp Ile Glu Asn Phe Tyr Lys Asn Gly Tyr Leu Asp Leu Pro Leu
 165 170 175
 Asp Val Val Ser Ser Pro Asn Glu Tyr Phe Phe Met Ser Ala Gly Glu
 180 185 190
 Asn His Phe Ala Leu Gly Arg Tyr Tyr Val Ser Glu Gly Lys Ile Ile
 195 200 205
 Ala Leu Lys Ala Met Asp Lys Ser Val Trp Gly Ile Lys Pro Leu Asn
 210 215 220
 Thr Glu Gln Arg Cys Ala Leu Asp Leu Leu Leu Arg Asp Asp Val Lys
 225 230 235 240
 Leu Val Thr Leu Ile Gly Gln Ala Gly Ser Gly Lys Thr Ile Leu Ala
 245 250 255
 Leu Ala Ala Ala Met His Lys Val Phe Asp Lys Glu Thr Tyr Asn Lys
 260 265 270
 Val Leu Val Ser Arg Pro Ile Val Pro Met Gly Arg Asp Ile Gly Phe
 275 280 285
 Leu Pro Gly Leu Lys Glu Asp Lys Leu Met His Trp Met Gln Pro Ile
 290 295 300
 Tyr Asp Asn Met Glu Val Leu Phe Ser Ile Asn Gln Met Gly Asn Ser
 305 310 315 320
 Ser Glu Ala Leu Gln Ala Leu Met Asp Ala Lys Lys Leu Glu Met Glu
 325 330 335
 Ala Leu Thr Tyr Ile Arg Gly Arg Ser Leu Pro Lys Ala Phe Ile Ile
 340 345 350
 Ile Asp Glu Ala Gln Asn Leu Thr Pro His Glu Ile Lys Thr Ile Ile
 355 360 365
 Ser Arg Ala Gly Lys Gly Thr Lys Ile Val Leu Thr Gly Asp Pro Thr
 370 375 380
 Gln Ile Asp Ser Leu Tyr Phe Asp Glu Asn Ser Asn Gly Leu Thr Tyr
 385 390 395 400
 Leu Val Gly Lys Phe His His Leu Ala Leu Tyr Gly His Met Phe Met
 405 410 415
 Thr Arg Thr Glu Arg Ser Glu Leu Ala Ala Ala Ala Thr Ile Leu
 420 425 430

<210>125

<211>184

<212>PRT

<213>Chlamydia pneumoniae

<400>125

Asn Asn Glu Ser Arg Trp Gly Gly Tyr Lys Ser Ser Ser Ile Gly Ser
 1 5 10 15
 Ser Gln Cys Arg Phe Leu Gly Leu Ser Gln Arg Pro Leu Asn Pro Glu
 20 25 30
 Arg Gln Gly Thr Pro Leu Asn Glu Gly Glu Cys Arg Ala Gly Met Trp
 35 40 45
 Arg Asn Ala Asp Gly Ser Asn His Thr Gly Lys Gln Gly Lys Pro His
 50 55 60
 Tyr Leu Ala Gln Leu Leu Gly Pro Lys Ala Val Asp His His Asn Lys
 65 70 75 80
 Ser Gln Ala Ala Phe Asp Arg Cys Lys Asn Ala Tyr Leu Asn Cys Phe
 85 90 95
 Ser Leu Ala Gln Thr Leu Gly Val Thr Phe Leu Gln Ile Pro Leu Ile
 100 105 110
 Ser Ser Gly Ile Tyr Ala Pro Pro Glu Asn Arg Lys Lys Pro Asn Ser
 115 120 125
 Glu Glu Asn Lys Val Arg Met Arg Trp Ile His Ala Val Lys Cys Ala

130 135 140
 Leu Val Ala Ala Met Gln Glu Phe Gly Asn Glu Pro Gly Asn Thr Asp
 145 150 155 160
 Arg Arg Met Leu Ile Val Leu Thr Asp Leu Lys Thr Pro Ala Ile Thr
 165 170 175
 Asp Pro Lys Lys Lys Ser His Leu
 180

<210>126

<211>195

<212>PRT

<213>Chlamydia pneumoniae

<400>126

Lys Asn Leu Phe His Tyr Lys Ala Ile Leu Met Ser Ile Phe Asn Glu
 1 5 10 15
 Glu Val Phe Ile Ile Ser His Arg His Thr Pro Leu Gly Gln Thr Ser
 20 25 30
 Thr Ala Leu Arg Asn Thr Pro Leu Val Asn Pro Leu His Arg Thr Asn
 35 40 45
 Leu Gln Arg Ile Ala Ser Tyr Ile Pro Ile Phe Ser Thr Phe Ile Gly
 50 55 60
 Ile Lys Thr Leu Lys Gly Ile Ser Ser Leu Gln Tyr Ser Met Val Leu
 65 70 75 80
 Met Thr Gly Asn Phe Ser Ser Val Cys Lys Thr Leu Pro Cys Pro Glu
 85 90 95
 Ile Tyr Glu Glu Leu Pro Lys Val Arg Lys Glu Ala Trp Leu Glu Ile
 100 105 110
 Phe Gly Ile Lys Ala Leu Tyr Tyr Leu Val Leu Gly Val Ile Lys Ile
 115 120 125
 Ile Lys Leu Ile Val Arg Tyr Leu Cys Pro Cys Cys Arg Pro Pro Glu
 130 135 140
 Pro Arg Glu Pro Gln Asn Pro Leu Thr Pro Thr Pro Leu Asp Met Gly
 145 150 155 160
 Gln Gln Ile Asp Ala Ile Phe Ser Thr Pro Thr Ser Pro Thr Gly Phe
 165 170 175
 Lys Asp Pro Phe Leu Asp Asp Leu Leu Gln Glu Asp Lys Lys Lys Ala
 180 185 190
 Pro His Leu
 195

<210>127

<211>1043

<212>PRT

<213>Chlamydia pneumoniae

<400>127

Met Thr Ala Asp Glu Val Gly Lys Asn Ser Phe Ala Lys Lys Glu Glu
 1 5 10 15
 Gln Val Leu Lys Phe Trp Lys Asp Asn Gln Ile Phe Glu Lys Ser Leu
 20 25 30
 Gln Asn Arg Gln Gly Lys Thr Leu Tyr Ser Phe Tyr Asp Gly Pro Pro
 35 40 45
 Phe Ala Thr Gly Leu Pro His Tyr Gly His Leu Leu Ala Ser Thr Ile
 50 55 60
 Lys Asp Val Val Gly Arg Tyr Ala Thr Met Asp Gly Tyr Tyr Val Pro
 65 70 75 80
 Arg Arg Phe Gly Trp Asp Cys His Gly Val Pro Val Glu Tyr Glu Val
 85 90 95
 Glu Lys Ser Leu Ser Leu Thr Ala Pro Gly Pro Ile Glu Asp Phe Gly
 100 105 110
 Ile Ala Ser Phe Asn Glu Glu Cys Arg Lys Ile Val Phe Arg Tyr Val
 115 120 125
 His Glu Trp Glu Tyr Tyr Ile Asn Arg Ile Gly Arg Trp Val Asp Phe
 130 135 140
 Ser Ser Thr Trp Lys Thr Met Asp Ala Ser Phe Met Glu Ser Val Trp
 145 150 155 160
 Trp Val Phe Gln Ser Leu Tyr Asn Gln Gly Leu Val Tyr Glu Gly Thr

165 170 175
 Lys Val Val Pro Phe Ser Thr Ala Leu Gly Thr Pro Leu Ser Asn Phe
 180 185 190
 Glu Ala Ser Gln Asn Tyr Lys Glu Val Asp Asp Pro Ser Leu Val Val
 195 200 205
 Arg Met Pro Leu Gln Asn Asp Ser Ala Ser Leu Leu Val Trp Thr Thr
 210 215 220
 Thr Pro Trp Thr Leu Pro Ser Asn Met Ala Ile Ala Val Gly Glu Thr
 225 230 235 240
 Leu Val Tyr Val Arg Ile Gln Asp Lys Lys Ser Gly Glu Gln Trp Ile
 245 250 255
 Leu Ser Gln Gly Cys Val Ser Arg Trp Phe Ser Asn Pro Glu Glu Phe
 260 265 270
 Val Ile Leu Glu Ser Phe Ser Gly Lys Asp Leu Val Gly Arg Thr Tyr
 275 280 285
 Glu Pro Pro Phe Thr Phe Phe Gln Ser Lys Arg Glu Glu Gly Ala Phe
 290 295 300
 Arg Val Ile Ala Ala Ser Phe Val Glu Glu Ser Glu Gly Thr Gly Val
 305 310 315 320
 Val His Met Ala Pro Ala Phe Gly Glu Gly Asp Phe Leu Val Cys Lys
 325 330 335
 Glu Asn His Val Pro Leu Val Cys Pro Val Asp Ala His Gly Ser Phe
 340 345 350
 Thr Glu Glu Ile Pro Gln Tyr Gln Gly Gln Tyr Ile Lys His Ala Asp
 355 360 365
 Lys Glu Ile Ile Lys Phe Leu Lys Lys Glu Gly Arg Ile Phe Tyr His
 370 375 380
 Gly Thr Val Lys His Arg Tyr Pro Phe Cys Trp Arg Thr Asp Thr Pro
 385 390 395 400
 Leu Ile Tyr Lys Ala Val Asn Ser Trp Phe Val Ala Val Glu Lys Ile
 405 410 415
 Lys Asp Lys Met Leu Arg Ala Asn Ser Ser Ile His Trp Val Pro Glu
 420 425 430
 His Ile Gln Glu Gly Arg Phe Gly Lys Trp Leu Glu Gly Ala Arg Asp
 435 440 445
 Trp Ala Ile Ser Arg Asn Arg Tyr Trp Gly Thr Pro Ile Pro Ile Trp
 450 455 460
 Lys Ser Ala Asp Gly Glu Ile Leu Val Val Gly Ser Ile Arg Glu Leu
 465 470 475 480
 Glu Glu Leu Thr Gly Thr Gln Ile Thr Asp Ile His Arg His Phe Ile
 485 490 495
 Asp Asp Leu Asn Ile Val Lys Asp Gly Lys Pro Phe His Arg Ile Pro
 500 505 510
 Tyr Val Phe Asp Cys Trp Phe Asp Ser Gly Ala Met Pro Tyr Ala Gln
 515 520 525
 Asn His Tyr Pro Phe Glu Asn Gln Lys Glu Thr Glu Glu Ala Phe Pro
 530 535 540
 Ala Asp Phe Ile Ala Glu Gly Leu Asp Gln Thr Arg Gly Trp Phe Tyr
 545 550 555 560
 Thr Leu Thr Val Ile Ser Ala Ile Leu Phe Asp Arg Pro Ala Phe Arg
 565 570 575
 Asn Ala Ile Val Asn Gly Ile Ile Leu Ala Glu Asp Gly Asn Lys Met
 580 585 590
 Ser Lys Arg Leu Asn Asn Tyr Pro Ser Pro Lys Tyr Val Leu Asp Thr
 595 600 605
 Tyr Gly Ala Asp Ala Leu Arg Leu Tyr Leu Leu His Ser Val Val Val
 610 615 620
 Lys Ala Glu Asp Leu Arg Phe Ser Asp Lys Gly Ile Glu Gly Val Leu
 625 630 635 640
 Lys Gln Ile Leu Leu Pro Leu Thr Asn Val Leu Ser Phe Phe Asn Thr
 645 650 655
 Tyr Ala Glu Leu Tyr Gly Phe Asp Pro Lys Ser Gln Asp Ile Glu Pro
 660 665 670
 Ala Tyr Thr Glu Ile Asp Gln Trp Ile Leu Ser Asn Leu Tyr Ser Val

675 680 685
 Val Gly Lys Val Arg Glu Ser Met Ser Gln Tyr His Leu Asn Phe Ala
 690 695 700
 Val Glu Pro Phe Val Thr Phe Ile Asp Asp Leu Thr Asn Trp Tyr Ile
 705 710 715 720
 Arg Arg Cys Arg Arg Arg Phe Trp Glu Ala Glu Asp Thr Pro Asp Arg
 725 730 735
 Arg Ala Ala Phe Ser Thr Leu Tyr Glu Val Leu Thr Val Phe Cys Lys
 740 745 750
 Val Ile Ala Pro Phe Val Pro Phe Leu Ala Glu Asp Ile Tyr Gln Lys
 755 760 765
 Leu Lys Leu Glu Lys Glu Pro Glu Ser Val His Leu Cys Asp Phe Pro
 770 775 780
 Gln Val Glu Met Asp Lys Ile Leu Pro Asp Leu Glu Lys Arg Met His
 785 790 795 800
 Asp Ile Arg Glu Ile Val Gly Leu Gly His Ser Leu Arg Lys Glu His
 805 810 815
 Lys Leu Lys Val Arg Gln Pro Leu Ala Asn Phe Tyr Val Val Gly Ser
 820 825 830
 Lys Asp Arg Leu Ser Leu Leu Lys Thr Phe Glu Gly Leu Ile Ala Glu
 835 840 845
 Glu Leu Asn Val Lys Asn Val Ile Phe Tyr Glu Glu Ala Pro Ser Phe
 850 855 860
 Ile Tyr Thr Thr Val Lys Pro Asn Phe Arg Met Leu Gly Lys Lys Val
 865 870 875 880
 Gly Ser Lys Met Lys Glu Val Gln Lys Ala Leu Ser Glu Leu Pro Asn
 885 890 895
 Asn Ala Ile Asp Lys Leu Ile Gln Glu Glu Thr Trp Val Leu Thr Ile
 900 905 910
 Asp Asp Arg Glu Ile Ala Leu Asp Gly Asp Asp Val Val Ile Cys Arg
 915 920 925
 His Thr Asp Pro Gly Tyr Ile Ala Arg Ser Ser Ala Leu Phe Ser Val
 930 935 940
 Ile Leu Asp Cys Gln Leu Arg Glu Pro Leu Ile Val Glu Gly Ile Ala
 945 950 955 960
 Arg Glu Leu Val Asn Lys Ile Asn Thr Met Arg Arg Asn Gln Gln Leu
 965 970 975
 His Val Ser Asp Arg Ile Ala Leu Arg Ile Lys Thr Thr Glu Ala Val
 980 985 990
 His Arg Ala Phe Leu Asp Tyr Glu Asn Tyr Ile Cys Glu Glu Thr Leu
 995 1000 1005
 Ile Ile Ala Tyr Asp Phe Thr Gln Asp Ser Asp Phe Gln Gly Glu Asn
 1010 1015 1020
 Trp Asp Ile Asn Gly His Ala Thr Gln Ile Glu Ile Thr Val Ser Ser
 1025 1030 1035 1040
 Ile Asp Ser

<210>128

<211>636

<212>PRT

<213>Chlamydia pneumoniae

<400>128

Met Lys Gln His Tyr Ser Leu Asn Lys Ser Arg His Ile Leu Arg Ser
 1 5 10 15
 Thr Tyr Lys Leu Leu Lys Ser Lys Lys Leu Ala His Ser Pro Ala Asp
 20 25 30
 Lys Lys Gln Leu Gln Glu Leu Leu Glu Gln Leu Glu Glu Ala Ile Phe
 35 40 45
 Glu His Asp Gln Glu Thr Ala Ser Asp Leu Ala Gln Gln Ala Leu Ala
 50 55 60
 Phe Ser Asn Arg Tyr Pro Asn Ser Phe Gly Arg Lys Thr Tyr Glu Leu
 65 70 75 80
 Ile Lys Ala Leu Leu Phe Ala Gly Val Val Ala Phe Leu Val Arg Gln
 85 90 95

Phe Trp Phe Glu Leu Tyr Glu Val Pro Thr Gly Ser Met Arg Pro Thr
 100 105 110
 Ile Leu Glu Gln Asp Arg Ile Leu Val Ser Lys Thr Thr Phe Gly Leu
 115 120 125
 His Cys Pro Phe Ala Lys Lys Pro Leu Ala Phe Asn Pro Glu Ser Val
 130 135 140
 Thr Arg Gly Gly Leu Val Val Phe Thr Val Gly Asp Leu Pro Ile Pro
 145 150 155 160
 Asp Ala Asp Thr Lys Tyr Phe Gly Leu Ile Pro Gly Lys Lys Arg Tyr
 165 170 175
 Ile Lys Arg Cys Met Gly Arg Pro Gly Asp Phe Leu Tyr Phe Tyr Gly
 180 185 190
 Gly Lys Ile Tyr Gly Leu Asp Asp Ala Gly Lys Arg Ile Glu Phe Pro
 195 200 205
 Ser Val His Gly Leu Glu Asn Leu Tyr His Val Pro Tyr Ile Ser Phe
 210 215 220
 Asp Gly Thr Thr Ser Ser His Thr Glu Gly Gln Lys Thr Ile Ile Asp
 225 230 235 240
 Phe Lys Gln Phe Asn Gln Ser Tyr Gly Arg Leu Ile Phe Pro Gln Thr
 245 250 255
 Ser Met Tyr Gly Gln Phe Phe Asp His Lys Glu Trp His Gln Asp Glu
 260 265 270
 Pro Asn Lys Leu Lys Asp Pro His Leu Ser Pro Val Ser Tyr Ala Asp
 275 280 285
 Leu Phe Gly Met Gly Asn Tyr Ala Met Val Arg Ile Leu Thr Glu His
 290 295 300
 Gln Ala Arg Thr Ser His Leu Leu Pro Asn Pro Gly Ser Pro Thr Lys
 305 310 315 320
 Val Tyr Leu Glu Ile Cys His Thr Ala Asn Leu Ser Tyr Pro Lys Pro
 325 330 335
 Leu Leu Arg His Tyr Glu His Gln Leu Ser Pro Ala Ile Gln Pro Met
 340 345 350
 Lys Thr Leu Leu Pro Leu Arg Lys Glu His Leu His Leu Ile Arg Asn
 355 360 365
 Asn Leu Thr Thr Ser Arg Phe Ile Val Ala Gln Gly Cys Ala Tyr Lys
 370 375 380
 Tyr His Gln Phe Lys Ile Asn Thr Ser Gly Ile Ala Lys Ala Tyr Ala
 385 390 395 400
 Ile Leu Leu Pro Lys Val Pro Asp Gly Cys Tyr Glu Tyr Ser Lys Gly
 405 410 415
 Glu Ala Tyr Gln Ile Gly Phe Gly Glu Ile Arg Tyr Lys Leu Lys Ser
 420 425 430
 Ser His Pro Leu Thr Gln Leu Asn Asp Lys Gln Val Ile Glu Leu Phe
 435 440 445
 Asn Cys Gly Ile Asn Phe Ser Ser Ile Tyr Asn Pro Val Asn Pro Leu
 450 455 460
 Gln Ala Pro Leu Pro Asn Arg Tyr Ala Phe Phe Asn Gln Gly Asn Leu
 465 470 475 480
 Tyr Ile Met Asp Ser Pro Val Phe Ile Lys Asn Asp Pro Thr Leu Gln
 485 490 495
 Lys Phe Val Thr Ser Glu Thr Glu Lys Gln Glu Gly Ser Ser Glu Thr
 500 505 510
 Gln Pro Tyr Ile Ala Phe Val Asp Lys Gly Leu Pro Pro Glu Asp Phe
 515 520 525
 Lys Glu Phe Val Glu Phe Ile His Asn Phe Gly Ile Gln Val Pro Lys
 530 535 540
 Gly His Val Leu Val Leu Gly Asp Asn Tyr Pro Met Ser Ala Asp Ser
 545 550 555 560
 Arg Glu Phe Gly Phe Val Pro Met Glu Asn Leu Leu Gly Ser Pro Leu
 565 570 575
 Cys Thr Phe Trp Pro Ile Gly Arg Met Gly Arg Leu Thr Gly Val Ser
 580 585 590
 Ala Pro Thr Thr Leu Ser Gly Tyr Leu Val Ser Gly Ile Ala Leu Ala
 595 600 605

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PCT/IB98/01890

Thr Gly Leu Ser Leu Ile Gly Tyr Val Tyr Tyr Gln Lys Arg Arg Arg
 610 615 620
 Leu Phe Pro Lys Lys Glu Glu Lys Asn His Lys Lys
 625 630 635
 <210>129
 <211>276
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>129
 Gln Leu Gln Asn Arg Tyr Pro Ile Met Pro Asn Asp Ser Ser Thr Tyr
 1 5 10 15
 Phe Glu Arg Ile Leu Gln Lys Tyr Leu Met Lys Lys Gln Gly Lys Thr
 20 25 30
 Leu Phe Leu Phe Leu Phe Leu Ser Phe Leu Phe Ser Thr Ala Phe Ser
 35 40 45
 Gly Leu Phe Ala Ser Gln Thr Ser Ser Leu Arg Thr Ile Gln Glu Asn
 50 55 60
 Ile Phe Leu Ala Lys Thr Gly Asp Tyr Thr Val Leu Ser Arg Gly Ser
 65 70 75 80
 Gln Arg Thr Phe Val Leu Val Lys Ser Thr Thr Pro Lys Thr Val Trp
 85 90 95
 Ile Glu Ile Ile His Phe Pro Cys Ile Ala His Lys Glu Arg Pro Ser
 100 105 110
 Leu Glu Gln Ala Ser Trp Lys Thr Val Ile His Gln Leu Glu Ser Pro
 115 120 125
 Ser Gln Val Phe Val Val Ser Leu Ser Ser Glu Gly Ser Gln Phe Phe
 130 135 140
 Ser Leu Asn Thr Arg Thr Lys Ser Leu Glu Pro Val Gly Lys Ser Thr
 145 150 155 160
 Thr Val Pro Ala Phe Leu Gln Ile Phe Asp Leu Pro Leu Ser Pro Ala
 165 170 175
 Pro Ala Asn Val Ile Lys Thr Lys Gly Lys Glu Asn Lys Pro Trp Ser
 180 185 190
 Pro Lys Val Ser Phe Glu Gly Ala Pro Leu Thr Ser Ile Ser Val Asn
 195 200 205
 Ala Trp Gln Gly Leu Trp Pro Lys Asp Arg Gly Pro Leu Ser Glu Thr
 210 215 220
 Gly Ile Leu Met Tyr Phe Thr Gln Pro Asp Ile Ser Val Phe Pro Leu
 225 230 235 240
 Trp Val Ser Ile Glu Thr Pro Lys Gly Thr Ser Ile Val Arg Ala Val
 245 250 255
 Asp Ile Gly His Gly Ala Thr Ser Pro Tyr Val Tyr Ser Leu Pro Asp
 260 265 270
 Ser Lys Thr Gln
 275

<210>130
 <211>109
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>130

Met Lys Lys Asn Thr His Pro Glu Tyr Arg Gln Val Leu Phe Val Asp
 1 5 10 15
 Xaa Ser Thr Gly Tyr Lys Phe Val Cys Gly Xaa Thr Tyr Gln Ser Glu
 20 25 30
 Lys Thr Glu Val Phe Glu Gly Lys Glu Tyr Pro Val Cys Tyr Val Ser
 35 40 45
 Val Ser Ser Ser Ser His Pro Phe Phe Thr Gly Ser Lys Lys Phe Val
 50 55 60
 Asp Ala Glu Gly Arg Val Asp Lys Phe Leu Lys Arg Tyr Ser Asn Val
 65 70 75 80
 Arg Gln Pro Ala Gln Gln Pro Gln Pro Glu Asp Ala Leu Pro Ala
 85 90 95
 Ala Lys Gly Lys Lys Lys Val Val Thr Lys Lys Lys Lys
 100 105

<210>131

<211>359

<212>PRT

<213>Chlamydia pneumoniae

<400>131

Gly Phe Met Lys Lys Lys Val Ala Glu Tyr Leu Asn Arg Leu Ala Glu
 1 5 10 15
 Val Glu Ile Lys Ile Ser Asn Pro Glu Ile Phe Ser Asn Ser Lys Glu
 20 25 30
 Tyr Ser Ala Leu Ser Lys Glu His Ser Tyr Leu Leu Glu Leu Lys Asn
 35 40 45
 Ala Tyr Asp Lys Ile Leu Asn Leu Glu Lys Val Leu Ala Asp Asp Lys
 50 55 60
 Gln Ala Leu Ala Ile Glu Lys Asp Pro Glu Met Val Val Met Leu Glu
 65 70 75 80
 Glu Gly Ile Asn Glu Asn Lys Val Glu Leu Glu Lys Leu Asn Lys Ile
 85 90 95
 Leu Glu Ser Leu Leu Val Pro Pro Asp Pro Asp Asp Asp Leu Asn Val
 100 105 110
 Ile Met Glu Leu Arg Ala Gly Thr Gly Gly Glu Glu Ala Ala Leu Phe
 115 120 125
 Val Gly Asp Cys Val Arg Met Tyr His Leu Tyr Ala Ser Ser Lys Gly
 130 135 140
 Trp Lys Tyr Glu Val Leu Ser Ala Ser Glu Ser Asp Leu Lys Gly Tyr
 145 150 155 160
 Lys Glu Tyr Val Met Gly Ile Ser Gly Thr Gly Val Lys Arg Leu Leu
 165 170 175
 Gln Tyr Glu Ala Gly Thr His Arg Val Gln Arg Val Pro Glu Thr Glu
 180 185 190
 Thr Gln Gly Arg Val His Thr Ser Ala Ile Thr Ile Ala Val Leu Pro
 195 200 205
 Glu Pro Ser Glu Glu Asp Thr Glu Leu Leu Ile Asn Glu Lys Asp Leu
 210 215 220
 Lys Ile Asp Thr Phe Arg Ala Ser Gly Ala Gly Gly Gln His Val Asn
 225 230 235 240
 Val Thr Asp Ser Ala Val Arg Ile Thr His Leu Pro Thr Gly Val Val
 245 250 255
 Val Thr Cys Gln Asp Glu Arg Ser Gln His Lys Asn Lys Asp Lys Ala
 260 265 270
 Met Arg Ile Leu Lys Ala Arg Ile Arg Asp Ala Glu Met Gln Lys Arg
 275 280 285
 His Asn Glu Ala Ser Ala Met Arg Ser Ala Gln Val Gly Ser Gly Asp
 290 295 300
 Arg Ser Glu Arg Ile Arg Thr Tyr Asn Phe Ser Gln Asn Arg Val Thr
 305 310 315 320
 Asp His Arg Ile Gly Leu Thr Leu Tyr Asn Leu Asp Lys Val Met Glu
 325 330 335
 Gly Asp Leu Asp Pro Ile Thr Thr Ala Met Val Ser His Ala Tyr His
 340 345 350
 Gln Leu Leu Glu His Gly Asn
 355

<210>132

<211>296

<212>PRT

<213>Chlamydia pneumoniae

<400>132

Met Pro Thr Thr Ser Tyr Ser Asn Met Glu Ile Lys Lys Ala Ile Gln
 1 5 10 15
 Glu Gly Thr Ala Tyr Leu Asp Tyr Tyr Gly Val Pro Leu Ser Asp Cys
 20 25 30
 Glu Ala Leu Tyr Ile Leu Met Asp Leu Leu Glu Val Ser Ser Arg Ala
 35 40 45
 Lys Leu Phe Asp Leu Val Gly Ile Ser Glu Thr Met Leu Met Glu Tyr
 50 55 60

Arg Lys Arg Leu Ala Leu Arg Gly Gln Arg Cys Pro Thr Ala Tyr Leu
 65 70 75 80
 Asn Gly Ala Val Ser Phe Leu Gly Leu Arg Leu Arg Val Asp Ser Arg
 85 90 95
 Val Leu Ile Pro Arg Thr Glu Thr Glu Leu Leu Ala Glu Tyr Ile Ile
 100 105 110
 Asn Tyr Leu Leu Ser His Ser Glu Ile Gln Thr Phe Tyr Asp Ile Cys
 115 120 125
 Cys Gly Ser Gly Cys Leu Gly Leu Ala Ile Lys Lys Ser Cys Pro His
 130 135 140
 Val Glu Val Val Leu Ser Asp Val Cys Pro Gln Ala Val Ala Val Ala
 145 150 155 160
 Asn Glu Asn Ala Lys Ser Asn Gly Leu Asp Val Lys Ile Leu Leu Gly
 165 170 175
 Asp Leu Ser Ala Pro Tyr Thr Arg Pro Ala Asp Ala Phe Val Cys Asn
 180 185 190
 Pro Pro Tyr Leu Ser Phe Asn Glu Ile Ile His Ile Asp Pro Glu Val
 195 200 205
 Arg Cys Tyr Glu Pro Trp Lys Ala Leu Val Gly Gly Ser Thr Gly Leu
 210 215 220
 Glu Phe Tyr Gln Arg Ile Ala Gln Glu Leu Pro Lys Ile Val Thr Ser
 225 230 235 240
 Thr Gly Val Gly Trp Leu Glu Ile Gly Ser Ser Gln Gly Glu Ser Ile
 245 250 255
 Lys Asn Ile Phe Ser Lys His Gly Ile Tyr Gly Arg Leu His Gln Asp
 260 265 270
 Leu Ser Gly Arg Asp Arg Ile Phe Phe Leu Glu Met Asp Gly Arg Asp
 275 280 285
 Pro Val Ser Ser Gly Ala Tyr Ser
 290 295

<210>133

<211>448

<212>PRT

<213>Chlamydia pneumoniae

<400>133

Met Ile Asn Ser Leu Ser Gln Lys Leu Ser Ser Ile Phe Ser Phe Leu
 1 5 10 15
 Val Ser Ser Arg Arg Ile Asn Glu Glu Asn Ile Ser Glu Ser Ile Arg
 20 25 30
 Glu Val Arg Leu Ala Leu Leu Asp Ala Asp Val Asn Tyr His Val Val
 35 40 45
 Lys Asp Phe Ile Ser Lys Val Lys Xaa Lys Ile Leu Gly Glu Glu Ile
 50 55 60
 Trp Lys His Val Ser Pro Gly Lys Gln Phe Ile Arg Cys Leu His Glu
 65 70 75 80
 Glu Leu Val Ala Phe Leu Ser Asp Gly Arg Glu Glu Phe Thr Ile Gln
 85 90 95
 Lys Thr Pro Ser Ile Ile Leu Leu Cys Gly Leu Gln Gly Ala Gly Lys
 100 105 110
 Thr Thr Thr Ala Ala Lys Leu Ala Asp Tyr Val Ile Lys Asn Lys Lys
 115 120 125
 Ala Lys Lys Val Leu Val Val Pro Cys Asp Leu Lys Arg Phe Ala Ala
 130 135 140
 Val Asp Gln Leu Lys Ile Leu Val Ala Gln Thr Lys Ala Glu Phe Tyr
 145 150 155 160
 Gln Ser Gln Glu Asn Lys Pro Ile Asp Val Val Val Lys Ala Leu Ala
 165 170 175
 Tyr Ala Lys Glu Asn Gly His Asp Phe Val Ile Leu Asp Thr Ala Gly
 180 185 190
 Arg Leu Asn Ile Asp Asn Glu Leu Met Glu Glu Leu Thr Ala Ile Gln
 195 200 205
 Lys Val Ser Gln Ala Asn Glu Arg Leu Phe Val Met Asn Val Ala Met
 210 215 220
 Gly Gln Asp Val Leu Ala Thr Val Gln Ala Phe Asp Gln Ser Leu Asp

225 230 235 240
 Leu Thr Gly Val Ile Leu Ser Met Thr Asp Gly Asp Ala Arg Ala Gly
 245 250 255
 Ala Val Phe Ser Ile Lys His Val Leu Gly Lys Pro Ile Lys Phe Glu
 260 265 270
 Gly Cys Gly Glu Arg Ile Gln Asp Leu Arg Ser Phe Asp Pro Gln Ser
 275 280 285
 Met Ala Glu Arg Ile Leu Gly Met Gly Asp Thr Ile Asn Phe Val Lys
 290 295 300
 Glu Met Arg Glu Tyr Ile Ser Glu Glu Glu Asp Ala Glu Leu Gly Lys
 305 310 315 320
 Lys Leu Val Thr Ala Ala Phe Thr Tyr Glu Asp Tyr Tyr Lys Gln Met
 325 330 335
 Lys Ala Phe Arg Arg Met Gly Pro Leu Arg Lys Leu Leu Gly Met Met
 340 345 350
 Pro Gly Phe Asn Asn Ala Lys Pro Ser Gln Lys Glu Ile Glu Asp Ser
 355 360 365
 Glu Gln Gln Met Lys Arg Thr Glu Ala Ile Ile Leu Ser Met Thr Pro
 370 375 380
 Glu Glu Arg Lys Glu Leu Val Glu Leu Asp Met Ser Arg Met Lys Arg
 385 390 395 400
 Ile Ala Ser Gly Cys Gly Leu Thr Leu Gly Asp Val Asn Gln Phe Arg
 405 410 415
 Lys Gln Met Ser Gln Ser Lys Lys Phe Phe Lys Gly Met Ser Lys Gly
 420 425 430
 Lys Met Glu Gln Val Arg Lys Lys Met Ser Gly Gly Asn Gln Trp Arg
 435 440 445

<210>134

<211>208

<212>PRT

<213>Chlamydia pneumoniae

<400>134

Met Lys Ile Asp Ile Leu Ser Leu Ser Pro Gly Tyr Phe Asp Gly Pro
 1 5 10 15
 Leu Gln Thr Ser Ile Leu Gly Arg Ala Ile Lys Gln Arg Leu Leu Asp
 20 25 30
 Val Gln Leu Thr Asn Leu Arg Asp Phe Gly Leu Gly Lys Trp Lys Gln
 35 40 45
 Val Asp Asp Thr Pro Phe Ser Gly Gly Gly Met Leu Leu Met Ala Glu
 50 55 60
 Pro Val Thr Ser Ala Ile Arg Ser Val Arg Lys Glu Asn Ser Lys Val
 65 70 75 80
 Ile Tyr Leu Ser Pro Gln Gly Ala Leu Leu Thr Ala Glu Lys Ser Arg
 85 90 95
 Glu Leu Ala Ala Ala Ser His Leu Ile Leu Leu Cys Gly His Tyr Glu
 100 105 110
 Gly Ile Asp Glu Arg Ala Ile Glu Ser Glu Val Asp Glu Ile Ser
 115 120 125
 Ile Gly Asp Tyr Val Leu Thr Asn Gly Gly Ile Ala Ala Leu Val Leu
 130 135 140
 Ile Asp Ala Val Ser Arg Phe Ile Pro Gly Val Leu Gly Asn Gln Glu
 145 150 155 160
 Ser Ala Glu Arg Asp Ser Leu Glu Asn Gly Leu Leu Glu Gly Pro Gln
 165 170 175
 Tyr Thr Arg Pro Arg Glu Phe Glu Gly Lys Glu Val Pro Glu Val Leu
 180 185 190
 Leu Gln Gly Asp His Lys Ala Ile Ser Ser Val Glu Ile Gly Ala Lys
 195 200 205

<210>135

<211>189

<212>PRT

<213>Chlamydia pneumoniae

<400>135

Lys Asp Leu Ser Ile His Ala Leu Glu Ser Leu Lys Gly Lys Lys Phe

WO 99/27105

PCT/IB98/01890

1 5 10 15
 Gln Lys Tyr Cys Lys Gly Ile Thr Lys Pro Phe His Gln Trp Arg
 20 25 30
 Leu Glu Gln Ser Glu Arg Arg Thr Tyr Glu Arg Arg Pro Asp Leu Tyr
 35 40 45
 Leu Asn Tyr Leu Tyr Lys Arg Ser Ile Asp His Lys Phe Asp Glu Glu
 50 55 60
 Thr Thr Thr Asn Arg Asp His Phe Lys Cys Asp Lys Ile Ser Val Val
 65 70 75 80
 Leu Glu Val Asn Lys Leu Lys Arg Ala Lys Asn Phe Tyr Cys Lys Val
 85 90 95
 Phe Gly Leu Asp Ala Met Ser Cys Glu Asn Lys Phe Cys Leu Pro His
 100 105 110
 Glu Gly Lys Thr Ile Phe Trp Leu Arg Glu Val Gln Ala Glu Lys Lys
 115 120 125
 Asn Ile Val Thr Leu Ser Leu Ser Leu Asp Cys Ala Cys Glu Glu Asp
 130 135 140
 Phe Cys Tyr Leu Leu Arg Arg Trp Glu Leu Phe Gly Gly Lys Leu Leu
 145 150 155 160
 Glu Lys Gln Ala Asp Glu His Ala Val Trp Ala Leu Ala Gln Asp Leu
 165 170 175
 Asp Gly His Ala Trp Ile Phe Ser Trp His Arg Met Lys
 180 185

<210>136

<211>121

<212>PRT

<213>Chlamydia pneumoniae

<400>136

Met Val Asn Leu Leu Lys Glu Leu Glu Gln Glu Gln Cys Arg Asn Asp
 1 5 10 15
 Leu Pro Glu Phe His Val Gly Asp Thr Ile Arg Leu Ala Thr Lys Ile
 20 25 30
 Ser Glu Gly Gly Lys Glu Arg Val Gln Val Phe Gln Gly Thr Val Met
 35 40 45
 Ala Arg Arg Gly Gly Gly Ser Gly Glu Thr Val Ser Leu His Arg Val
 50 55 60
 Ala Tyr Gly Glu Gly Met Glu Lys Ser Phe Leu Leu Asn Ser Pro Arg
 65 70 75 80
 Ile Val Ser Ile Glu Ile Val Lys Arg Gly Lys Val Ala Arg Ala Arg
 85 90 95
 Leu Tyr Tyr Leu Arg Gly Lys Thr Gly Lys Ala Ala Lys Val Lys Glu
 100 105 110
 Phe Val Gly Pro Arg Ser Ser Lys Lys
 115 120

<210>137

<211>214

<212>PRT

<213>Chlamydia pneumoniae

<400>137

Met Asn Thr Ser Ile Ser Glu Ile Gln Arg Phe Leu Ser Met Ile Ala
 1 5 10 15
 Phe Glu Lys Glu Leu Val Ser Glu Asp Phe Ser Val Val Ala Gly Ile
 20 25 30
 Asp Glu Ala Gly Arg Gly Pro Leu Ala Gly Pro Val Val Ala Ser Ala
 35 40 45
 Cys Ile Leu Pro Lys Gly Lys Val Phe Pro Gly Val Asn Asp Ser Lys
 50 55 60
 Lys Leu Ser Pro Lys Gln Arg Ala Gln Val Arg Asp Ala Leu Met Gln
 65 70 75 80
 Asp Pro Glu Val Cys Phe Gly Ile Gly Val Ile Ser Val Glu Arg Ile
 85 90 95
 Asp Gln Val Asn Ile Leu Glu Ala Thr Lys Glu Ala Met Leu Gln Ala
 100 105 110
 Ile Ser Ser Leu Pro Ile Ser Pro Asp Ile Leu Leu Val Asp Gly Leu

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115 120 125
 Tyr Leu Pro His Asp Ile Pro Cys Lys Lys Ile Ile Gln Gly Asp Ala
 130 135 140
 Lys Ser Ala Ser Ile Ala Ala Ala Ser Ile Leu Ala Lys Glu His Arg
 145 150 155 160
 Asp Asp Leu Met Leu Gln Leu His Arg Leu Tyr Pro Glu Tyr Gly Phe
 165 170 175
 Asp Arg His Lys Gly Tyr Gly Thr Ser Leu His Val Glu Ala Ile Arg
 180 185 190
 Arg Tyr Gly Pro Ser Pro Cys His Arg Lys Ser Phe Ser Pro Ile Lys
 195 200 205
 Gln Met Cys Ala Ile Val
 210

<210>138

<211>209

<212>PRT

<213>Chlamydia pneumoniae

<400>138

Val Cys Tyr Cys Met Asn Lys Ile Leu Val Asp Ser Pro Phe Ser Pro
 1 5 10 15
 Asp His Gln Lys Cys Cys Pro Lys Leu Phe Thr Ile Ser Ala Pro Ala
 20 25 30
 Gly Val Gly Lys Thr Thr Leu Val Arg Met Leu Glu Gln Glu Phe Ser
 35 40 45
 Ser Ala Phe Ala Glu Thr Ile Ser Val Thr Thr Arg Lys Pro Arg Glu
 50 55 60
 Gly Glu Val Pro Gly Lys Asp Tyr His Phe Val Ser His Glu Glu Phe
 65 70 75 80
 Gln Arg Leu Leu Asp Arg Gln Ala Leu Leu Glu Trp Val Phe Leu Phe
 85 90 95
 Gly Glu Cys Tyr Gly Thr Ser Met Leu Glu Ile Glu Arg Ile Trp Ser
 100 105 110
 Leu Gly Lys His Ala Val Ala Val Ile Asp Ile Gln Gly Ala Leu Phe
 115 120 125
 Ile Arg Ser Arg Met Pro Ser Val Ser Ile Phe Ile Ala Pro Pro Ser
 130 135 140
 Gln Glu Glu Leu Glu Arg Arg Leu Ala Ser Arg Gly Ser Glu Glu Gly
 145 150 155 160
 Ser Gln Arg Lys Glu Arg Leu Glu His Ser Leu Ile Glu Leu Ala Ala
 165 170 175
 Ala Asn Gln Phe Asp Tyr Val Ile Ile Asn Asp Asp Leu Asn Gln Ala
 180 185 190
 Tyr Arg Val Leu Lys Ser Ile Phe Ile Ala Glu Glu His Arg Asn Ile
 195 200 205
 Leu

<210>139

<211>100

<212>PRT

<213>Chlamydia pneumoniae

<400>139

Glu His Ile Met Ile Lys Lys Asp Arg Phe Thr Asn Glu Lys Leu Asn
 1 5 10 15
 Lys Leu Phe Asp Ser Pro Phe Ser Leu Val Asn Tyr Ala Ile Lys Gln
 20 25 30
 Ala Lys Ile Lys Ile Ala Lys Gly Asp Val Arg Ser Ser Asn Val Ala
 35 40 45
 Ile Glu Thr Leu Val Leu Leu Asp Arg Glu Gly Ile Gln Pro Glu Phe
 50 55 60
 Thr Glu Glu Ile Val Val Thr Ala Ser Pro Thr Val Glu Arg Lys Arg
 65 70 75 80
 Ser Glu His Thr Asn Ser Arg Lys Lys Asp Pro Ser Ala Tyr Thr Trp
 85 90 95
 Ser Asp Val Lys

100

<210>140

<211>554

<212>PRT

<213>Chlamydia pneumoniae

<400>140

Cys Lys Val Met Pro Gln Lys Val Leu Ile Thr Ser Ala Leu Pro Tyr
 1 5 10 15
 Ala Asn Gly Pro Leu His Phe Gly His Ile Ala Gly Val Tyr Leu Pro
 20 25 30
 Ala Asp Val Tyr Ala Arg Phe Arg Arg Leu Leu Gly Asp Asp Val Leu
 35 40 45
 Tyr Ile Cys Gly Ser Asp Glu Phe Gly Ile Ala Ile Thr Leu Asn Ala
 50 55 60
 Asp Arg Glu Gly Leu Gly Tyr Gln Glu Tyr Val Asp Met Tyr His Lys
 65 70 75 80
 Leu His Lys Asp Thr Phe Glu Lys Leu Gly Phe Ala Leu Asp Phe Phe
 85 90 95
 Ser Arg Thr Thr Asn Pro Phe His Ala Glu Leu Val Gln Asp Phe Tyr
 100 105 110
 Ser Gln Leu Lys Ala Ser Gly Leu Ile Glu Asn Arg Ile Ser Glu Gln
 115 120 125
 Leu Tyr Ser Glu Gln Glu Gln Arg Phe Leu Ala Asp Arg Tyr Val Glu
 130 135 140
 Gly Thr Cys Pro Arg Cys Gly Phe Asp His Ala Arg Gly Asp Glu Cys
 145 150 155 160
 Gln Ser Cys Gly Ala Asp Tyr Glu Ala Ile Asp Leu Ile Asp Pro Lys
 165 170 175
 Ser Lys Ile Ser Gly Val Glu Leu Val Lys Lys Glu Thr Glu His Ser
 180 185 190
 Tyr Phe Leu Leu Asp Arg Met Lys Asp Ala Leu Leu Ser Phe Ile Gln
 195 200 205
 Gly Cys Tyr Leu Pro Asp His Val Arg Lys Phe Val Val Asp Tyr Ile
 210 215 220
 Glu His Val Arg Ser Arg Ala Ile Thr Arg Asp Leu Ser Trp Gly Ile
 225 230 235 240
 Pro Val Pro Asp Phe Pro Gly Lys Val Phe Tyr Val Trp Phe Asp Ala
 245 250 255
 Pro Ile Gly Tyr Ile Ser Gly Thr Met Glu Trp Ala Ala Ser Gln Gly
 260 265 270
 Asn Pro Asp Glu Trp Lys Arg Phe Trp Leu Glu Asp Gly Val Glu Tyr
 275 280 285
 Val Gln Phe Ile Gly Lys Asp Asn Leu Pro Phe His Ser Val Val Phe
 290 295 300
 Pro Ala Met Glu Leu Gly Gln Lys Leu Asp Tyr Lys Lys Val Asp Ala
 305 310 315 320
 Leu Val Val Ser Glu Phe Tyr Leu Leu Glu Gly Arg Gln Phe Ser Lys
 325 330 335
 Ser Glu Gly Asn Tyr Val Asp Met Asp Lys Phe Leu Ser Ser Tyr Ser
 340 345 350
 Leu Asp Lys Leu Arg Tyr Val Leu Ala Ala Thr Ala Pro Glu Thr Ser
 355 360 365
 Asp Ser Glu Phe Thr Phe Leu Asp Phe Lys Thr Arg Cys Asn Ser Glu
 370 375 380
 Leu Val Gly Lys Phe Gly Asn Phe Ile Asn Arg Val Leu Ala Phe Ala
 385 390 395 400
 Glu Lys Asn His Tyr Asp Lys Leu Ser Tyr His Ser Val Val Leu Glu
 405 410 415
 Asp Ser Asp Arg Ala Phe Leu Glu Glu Val Arg Gln Leu Val Arg Asp
 420 425 430
 Ala Glu Lys Cys Tyr Arg Glu Tyr Ser Leu Arg Lys Ala Thr Ser Val
 435 440 445
 Ile Met Ser Leu Ala Ala Leu Gly Asn Val Tyr Phe Asn Gln Gln Ala
 450 455 460

Pro Trp Lys Leu Leu Lys Glu Gly Thr Arg Glu Arg Val Glu Ala Ile
 465 470 475 480
 Leu Phe Cys Ala Cys Tyr Cys Gln Lys Leu Leu Ala Leu Ile Ser Tyr
 485 490 495
 Pro Ile Ile Pro Glu Ser Ala Val Ala Ile Trp Glu Met Ile Ser Pro
 500 505 510
 Lys Ser Leu Glu Asn Cys Asn Leu Asp Thr Met Tyr Ala Arg Asp Leu
 515 520 525
 Trp Lys Glu Glu Ile Leu Asp Val Ile Asn Glu Glu Phe His Leu Lys
 530 535 540
 Ser Pro Arg Leu Leu Phe Thr Thr Val Glu
 545 550
 <210>141
 <211>408
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>141
 Ser Gln Ala His Phe Ile Phe Phe Glu Glu Asn Pro Phe Tyr Arg Arg
 1 5 10 15
 Arg Lys Ser Asn Cys Leu Gly Arg Gly Lys Leu Ser Ile Asp Leu Ala
 20 25 30
 Glu Gln Gln Arg Glu Ala Ile Lys Ala Cys Phe Ser Glu Lys Leu Leu
 35 40 45
 Ile Ile Thr Gly Gly Pro Gly Thr Gly Lys Ser Thr Ile Thr Gln Ala
 50 55 60
 Ile Leu Lys Ile Phe Glu Gln Val Thr His Lys Ile Ile Leu Ala Ala
 65 70 75 80
 Pro Thr Gly Lys Ala Ala Lys Arg Met Thr Glu Ile Thr Gln Lys His
 85 90 95
 Ser Val Thr Ile His Ala Leu Leu Gln Tyr Asp Phe Lys Thr Lys Ser
 100 105 110
 Phe Arg Lys Asn His Asp Asn Pro Ile Asp Cys Asp Leu Ile Ile Val
 115 120 125
 Asp Glu Ser Gly Met Met Asp Thr His Leu Leu His His Phe Leu Lys
 130 135 140
 Ala Leu Pro Asp Tyr Thr Thr Leu Val Phe Ile Gly Asp Ile His Gln
 145 150 155 160
 Leu Pro Ser Val Gly Pro Gly Asn Ile Leu Lys Asp Leu Ile Thr Ser
 165 170 175
 Asn Lys Met Thr Val Ile Arg Leu Asn Lys Ile Phe Arg Gln Val His
 180 185 190
 Asp Ser Gly Ile Val Thr Asn Ala His Arg Val Asn Glu Gly Glu Leu
 195 200 205
 Pro Ile Leu Tyr Ser Glu Thr Gly Arg Arg Asp Phe Leu Phe Phe Gln
 210 215 220
 Lys Asp Asp Gln Glu Glu Ala Leu Asn His Ile Ile His Leu Val Thr
 225 230 235 240
 Lys Phe Val Pro Gln Lys Tyr His Ile Tyr Pro Gln Asp Ile Gln Val
 245 250 255
 Leu Ala Pro Met Lys Lys Gly Thr Leu Gly Ile Tyr Asn Leu Asn Lys
 260 265 270
 Ala Leu Lys His Ala Leu Asn Pro Lys Lys Ala Asn Leu His Gly Arg
 275 280 285
 Phe Gln Ser Tyr Ala Val Gly Asp Lys Val Met Gln Ile Arg Asn Asn
 290 295 300
 Tyr Asn Lys Glu Val Phe Asn Gly Asp Ile Gly Tyr Val Ser Thr Ile
 305 310 315 320
 Asn Phe Glu Asp Lys Ala Val Val Val Arg Met Glu Gly Lys His Val
 325 330 335
 Gly Tyr Ser Phe Ser Glu Leu Asp Asp Leu Val Leu Ala Tyr Ala Thr
 340 345 350
 Ser Val His Lys Tyr Gln Gly Ser Glu Ser Pro Cys Ile Ile Ile Pro
 355 360 365
 Ile His Thr Ser His Phe Met Met Leu Tyr Arg Asn Leu Leu Tyr Thr

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370 375 380
 Ala Ile Thr Arg Gly Lys Lys Leu Val Ile Leu Val Gly Thr Lys Lys
 385 390 395 400
 Ala Ile Cys Tyr Cys Asn Lys Lys
 405

<210>142

<211>313

<212>PRT

<213>Chlamydia pneumoniae

<400>142

Asn Ser Met Glu Lys Ile Cys Gly Tyr Leu Glu Gln Ile Leu Val Glu
 1 5 10 15
 Asn Lys Asp Ser Gly Asp Ile Thr Ala Tyr Ile Lys Ile Pro Asn Lys
 20 25 30
 Thr Thr Pro Ile Leu Ile Lys Gly Lys Leu Pro Gln Pro Leu Glu Leu
 35 40 45
 Gly Ser Pro Ile Gln Ile Tyr Gly Val Trp Ser His Ser Pro Ser Asn
 50 55 60
 Thr Lys Tyr Phe Gln Ile His Ser Tyr Asp Ser Pro Leu Leu Tyr Glu
 65 70 75 80
 Tyr Arg Gly Val Phe His Tyr Leu Thr Ser Lys Leu Ile Lys Gly Ile
 85 90 95
 Gly Pro Lys Ile Ala Glu Lys Ile Ile Glu Lys Phe Gln Glu Lys Thr
 100 105 110
 Cys Tyr Val Leu Asp Ile Thr Pro Glu Arg Leu Ser Glu Val Ser Gly
 115 120 125
 Ile Ser Glu Thr Arg Cys Val Ser Ile Cys Lys Gln Leu Cys Glu Gln
 130 135 140
 Lys Met Leu Arg Lys Thr Leu Leu Phe Leu Gln Glu Tyr Asn Ile Pro
 145 150 155 160
 Ile His Tyr Gly Val Arg Ile Phe Lys Lys Tyr Gln Glu Lys Ser Ile
 165 170 175
 Glu Lys Ile Cys Glu Asp Pro Phe Leu Leu Ala Arg Glu Met Glu Gly
 180 185 190
 Ile Gly Phe Lys Thr Ala Asp Phe Ile Ala Met Lys Leu Gly Val Pro
 195 200 205
 Arg Asn Ser Glu Ser Arg Leu Cys Ala Gly Ile Gln His Ser Leu Glu
 210 215 220
 Glu Leu Gln Glu Glu Gly His Thr Cys Tyr Pro Ile Glu Leu Leu Ile
 225 230 235 240
 Asp Val Val Ala Lys Leu Leu Asn Gln Asp Val Phe Asp Thr Pro Ile
 245 250 255
 Thr Leu Glu Glu Ile Asp Thr Gln Ile Leu Asn Met Gln Lys Arg Asn
 260 265 270
 Phe Tyr Ile Phe Lys Thr Phe Leu Gly His Ser Met Ser Gly His Val
 275 280 285
 Ile Ser Ile Ser Gln Arg Lys Leu Leu Phe Leu Ile Ser Ser Ala Phe
 290 295 300
 Tyr Phe Leu Arg Gly Glu Ser Val Leu
 305 310

<210>143

<211>498

<212>PRT

<213>Chlamydia pneumoniae

<400>143

Ile Arg Ser Lys Gln Arg Thr Val Ala Ile Thr Leu Leu Val Leu Gly
 1 5 10 15
 Ile Leu Leu Ile Ala Ser Gly Ile Ile Phe Leu Ala Val Ala Ile Pro
 20 25 30
 Gly Leu Ser Ser Ala Val Ala Leu Gly Leu Gly Cys Gly Met Thr Ala
 35 40 45
 Leu Gly Thr Val Leu Leu Ile Thr Gly Leu Val Leu Leu Ile Arg Ser
 50 55 60
 Glu Lys Leu Ala Leu Glu Gln Val Glu Ile Lys Gln Ala Arg Thr Arg

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65					70					75				80
Val	Asn	Asn	Glu	Leu	Asp	Gln	Leu	Ser	Gln	Tyr	Val	Phe	Tyr	Thr
				85					90					95
Asn	Val	Leu	Asp	Asn	Leu	Lys	Arg	Trp	Ser	Tyr	Arg	Asp	Leu	Gly
			100					105				110		
Val	Arg	Gln	Ala	Gln	Glu	Glu	Val	Thr	Asn	Leu	Glu	Gln	Asp	Ile
		115					120					125		
Glu	Ile	Phe	Leu	Thr	Leu	Arg	Asp	Ile	Arg	Asn	Ala	Leu	Asp	Asn
	130				135					140				
Glu	Phe	Phe	Met	Thr	His	Ala	Lys	Gln	Cys	Leu	Ala	Gln	Val	Gly
	145				150				155					160
Ser	Leu	Phe	Gln	Asp	Ala	Ser	Ile	Asp	Glu	Phe	Ile	Asn	Leu	Ala
			165					170						175
Leu	Ser	Glu	Ile	Arg	Gln	His	Leu	Asp	Ile	Asn	Asp	Pro	Arg	Trp
		180					185					190		
Met	Ile	Thr	Lys	Lys	Val	Lys	Gly	Thr	Val	Val	Arg	Phe	Ile	Tyr
	195						200					205		
Ser	Thr	Met	Tyr	Lys	Gln	Ile	Lys	Ser	Asn	Phe	Glu	Lys	Ser	Asp
	210				215					220				
Gly	Gln	Leu	Arg	Lys	Met	Leu	Leu	Asn	Asn	Tyr	Lys	Thr	Ile	Glu
	225				230					235				240
Val	Leu	Tyr	Gln	Ser	Phe	Gln	Arg	Gly	Tyr	Asn	Arg	Ala	Ala	Leu
			245					250						255
Ser	Glu	Lys	Thr	Arg	Ile	Ile	His	Thr	Ser	Ser	Leu	Leu	His	Trp
	260						265					270		
Lys	Asp	Glu	Asp	Lys	His	Leu	Asn	Ile	Lys	Asn	Glu	Cys	Ala	Ser
	275						280					285		
Leu	Glu	Asn	Phe	Lys	Lys	Phe	Arg	Thr	Leu	Phe	Leu	Gly	Leu	Ser
	290				295					300				
Glu	Asp	Val	Ile	Asp	Phe	Thr	Gly	Ala	Ser	Gly	Trp	Asp	Cys	Ser
	305				310					315				320
Leu	Pro	Arg	Lys	Glu	Val	Pro	Leu	Asp	Gly	Gly	Lys	Lys	Lys	Leu
			325						330					335
Phe	Lys	Arg	Thr	Phe	Ala	Asp	Glu	Gln	Val	Gly	Asp	Trp	Asp	Arg
	340						345					350		
Thr	Ser	Leu	Glu	His	Met	Thr	Pro	Gln	Glu	Glu	Asp	Pro	Leu	Asp
	355						360					365		
Leu	Met	Asp	Gln	Val	Glu	Gln	Glu	Ala	Thr	Ser	Val	Leu	Lys	Asp
	370				375					380				
Asp	Arg	Tyr	Trp	Lys	Glu	Ile	Glu	Thr	Ser	Glu	Ala	Lys	Phe	Arg
	385				390					395				400
Leu	Pro	Arg	Glu	Asp	Asp	Phe	Glu	Lys	Gln	Ser	Gln	Ile	Asp	Ser
			405					410						415
Ile	Arg	Asp	Leu	Asp	Asp	His	Leu	Ser	Val	Trp	Ala	Asn	Gln	Leu
	420						425					430		
Ala	Ala	Glu	Asp	Ala	Leu	Ile	Glu	Val	Thr	Asp	Val	Gln	Glu	His
	435						440				445			
Asn	Arg	Glu	Met	Leu	Lys	Asn	Ile	Gln	Gln	Gly	Leu	Glu	Leu	Ile
	450				455					460				
Asp	Ala	Val	Lys	Ala	Thr	Leu	Pro	Arg	Val	Asp	Phe	Ile	Gln	Glu
	465				470					475				480
Leu	Glu	Lys	Glu	Glu	Leu	Pro	Leu	Val	Ala	Ala	Arg	Met	Ser	Leu
			485					490						495
Asn	Ser													

<210>144

<211>538

<212>PRT

<213>Chlamydia pneumoniae

<400>144

Pro	Phe	Phe	Ser	Lys	Pro	Pro	Glu	Glu	Ile	Ser	Gln	Leu	Glu	Ser
1				5					10				15	
Ile	Arg	Ser	Ala	Ala	Asn	Asp	Leu	Asn	Thr	Ile	Lys	Thr	Trp	Pro
			20					25					30	

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Lys Asp Gln Arg Leu Val Glu Thr Val Ser Arg Lys Leu Glu Arg Leu
 35 40 45
 Ala Ala Ala Gln Asn Tyr Met Ile Ser Glu Leu Cys Glu Ile Ser Glu
 50 55 60
 Ile Leu Glu Glu Glu Glu His His Leu Ile Leu Ala Gln Glu Ser Leu
 65 70 75 80
 Glu Trp Ile Gly Lys Ser Leu Phe Ser Thr Phe Leu Asp Met Glu Ser
 85 90 95
 Phe Leu Asn Leu Ser His Leu Ser Glu Val Arg Pro Tyr Leu Ala Val
 100 105 110
 Asn Asp Pro Arg Leu Leu Glu Ile Thr Glu Glu Ser Trp Glu Val Val
 115 120 125
 Ser His Phe Ile Asn Val Thr Ser Ala Phe Lys Lys Ala Gln Ile Leu
 130 135 140
 Phe Lys Asn Asn Glu His Ser Arg Met Lys Lys Lys Leu Glu Ser Val
 145 150 155 160
 Gln Glu Leu Leu Glu Thr Phe Ile Tyr Lys Ser Leu Lys Arg Ser Tyr
 165 170 175
 Arg Glu Leu Gly Cys Leu Ser Glu Lys Met Arg Ile Ile His Asp Asn
 180 185 190
 Pro Leu Phe Pro Trp Val Gln Asp Gln Gln Lys Tyr Ala His Ala Lys
 195 200 205
 Asn Glu Phe Gly Glu Ile Ala Arg Cys Leu Glu Glu Phe Glu Lys Thr
 210 215 220
 Phe Phe Trp Leu Asp Glu Glu Cys Ala Ile Ser Tyr Met Asp Cys Trp
 225 230 235 240
 Asp Phe Leu Asn Glu Ser Ile Gln Asn Lys Lys Ser Arg Val Asp Arg
 245 250 255
 Asp Tyr Ile Ser Thr Lys Lys Ile Ala Leu Lys Asp Arg Ala Arg Thr
 260 265 270
 Tyr Ala Lys Val Leu Leu Glu Glu Asn Pro Thr Thr Glu Gly Lys Ile
 275 280 285
 Asp Leu Gln Asp Ala Gln Arg Ala Phe Glu Arg Gln Ser Gln Glu Phe
 290 295 300
 Tyr Thr Leu Glu His Thr Glu Thr Lys Val Arg Leu Glu Ala Leu Gln
 305 310 315 320
 Gln Cys Phe Ser Asp Leu Arg Glu Ala Thr Asn Val Arg Gln Val Arg
 325 330 335
 Phe Thr Asn Ser Glu Asn Ala Asn Asp Leu Lys Glu Ser Phe Glu Lys
 340 345 350
 Ile Asp Lys Glu Arg Val Arg Tyr Gln Lys Glu Gln Arg Leu Tyr Trp
 355 360 365
 Glu Thr Ile Asp Arg Asn Glu Gln Glu Leu Arg Glu Glu Ile Gly Glu
 370 375 380
 Ser Leu Arg Leu Gln Asn Arg Arg Lys Gly Tyr Arg Ala Gly Tyr Asp
 385 390 395 400
 Ala Gly Arg Leu Lys Gly Leu Leu Arg Gln Trp Lys Lys Asn Leu Arg
 405 410 415
 Asp Val Glu Ala His Leu Glu Asp Ala Thr Met Asp Phe Glu His Glu
 420 425 430
 Val Ser Lys Ser Glu Leu Cys Ser Val Arg Ala Arg Leu Glu Val Leu
 435 440 445
 Glu Glu Glu Leu Met Asp Met Ser Pro Lys Val Ala Asp Ile Glu Glu
 450 455 460
 Leu Leu Ser Tyr Glu Glu Arg Cys Ile Leu Pro Ile Arg Glu Asn Leu
 465 470 475 480
 Glu Arg Ala Tyr Leu Gln Tyr Asn Lys Cys Ser Glu Ile Leu Ser Lys
 485 490 495
 Ala Lys Phe Leu Leu Ser Gly Arg Arg Ala Ile Ala Ser Phe Gly Ser
 500 505 510
 Glu Ser Lys Arg Gly Gly Cys Pro Val Lys Thr Ser Thr Gly Lys Met
 515 520 525
 Ser Arg Glu Gly Pro Lys Val Arg Asn Ile
 530 535

<210>145

<211>201

<212>PRT

<213>Chlamydia pneumoniae

<400>145

Lys Gly His Thr Ser Asn Ile Ile Ser Val Leu Lys Phe Tyr Pro Arg
 1 5 10 15
 Gln Ser Phe Phe Pro Glu Asp Glu Gln Leu Leu Val Ser Glu Ala
 20 25 30
 Asn Leu Arg Glu Val Gly Ala Gln Leu Lys Gln Val Gln Gly Lys Cys
 35 40 45
 Gln Glu Arg Ala Gln Lys Phe Ala Ile Phe Glu Lys His Ile Gln Glu
 50 55 60
 Gln Lys Ser Leu Ile Lys Glu Gln Val Arg Ser Phe Asp Leu Ala Gly
 65 70 75 80
 Val Gly Phe Leu Lys Ser Glu Leu Leu Ser Ile Ala Cys Asn Leu Tyr
 85 90 95
 Ile Lys Ala Val Val Lys Glu Ser Ile Pro Val Asp Val Pro Cys Met
 100 105 110
 Gln Leu Tyr Tyr Ser Tyr Tyr Glu Asp Asn Glu Ala Val Val Arg Asn
 115 120 125
 Arg Leu Leu Asn Met Thr Glu Arg Tyr Gln Asn Phe Lys Arg Ser Leu
 130 135 140
 Asn Ser Ile Gln Phe Asn Gly Asp Val Leu Leu Arg Asp Pro Val Tyr
 145 150 155 160
 Gln Pro Glu Gly His Glu Thr Arg Leu Lys Glu Arg Glu Leu Gln Glu
 165 170 175
 Thr Thr Leu Ser Cys Lys Lys Leu Lys Val Ala Gln Asp Arg Leu Ser
 180 185 190
 Glu Leu Glu Ser Arg Leu Ser Arg Arg
 195 200

<210>146

<211>259

<212>PRT

<213>Chlamydia pneumoniae

<400>146

Met Leu Arg Asn Gln Val Leu Val Tyr Cys Ser Glu Gly Val Ser Pro
 1 5 10 15
 Tyr Tyr Leu Arg His Thr Ile Arg Phe Leu Lys Tyr Tyr Ser Thr Gln
 20 25 30
 Glu Gly Ala Phe Asp Ile Leu Arg Val Xaa Gly Asn Phe Leu Ile Lys
 35 40 45
 Asn Pro Phe Trp Glu Glu Thr Thr Arg Leu Leu Val Phe Pro Gly Gly
 50 55 60
 Ala Asp Arg Pro Tyr His Arg Val Leu His Gly Leu Gly Thr Ala Arg
 65 70 75 80
 Ile Phe Gln Tyr Val Ser Glu Gly Gly Asn Phe Leu Gly Ile Cys Ala
 85 90 95
 Gly Ala Tyr Phe Gly Ser Lys Met Ile Tyr Phe Tyr Glu Pro Glu Gly
 100 105 110
 Ala Pro Leu Gln Gly Ala Arg Asp Leu Gly Phe Phe Pro Gly Thr Ala
 115 120 125
 Lys Gly Pro Ala Tyr Arg Gly Asn Phe Ser Tyr Val Ser Pro Ser Gly
 130 135 140
 Val Arg Val Ser Pro Gln Leu Phe Ser Asp Phe Gly Leu Gly Tyr Ala
 145 150 155 160
 Met Phe Asn Gly Gly Cys Phe Phe Glu Gly Ser Glu Gly Tyr Pro Gly
 165 170 175
 Val Asn Ile Glu Ser Arg Tyr Asp Asp Leu Pro Gly Lys Pro Ala Ser
 180 185 190
 Ile Val Ser Arg Ile Val Ser Lys Gly Leu Ala Val Leu Ser Gly Pro
 195 200 205
 His Ile Glu Tyr Leu Pro His Tyr Cys Arg Met Val Lys Glu Asn Val
 210 215 220

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Gln Lys Thr Arg Glu Phe Leu Gln Arg Glu Arg Thr Thr Leu Asp Arg
 225 230 235 240
 Tyr Cys Gln Asn Leu Val Gln Arg Leu Arg Gln Pro Ala Phe Ser Lys
 245 250 255
 Ala Asp Cys
 <210>147
 <211>396
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>147
 Ser Ser Met Val Lys Cys Ser Ser Ile Ile His Glu Asn Lys Lys Pro
 1 5 10 15
 Ala Gln Leu Leu Pro Glu Ser Lys Phe Ala Ala Ile Thr Lys Leu Ser
 20 25 30
 Leu Ala Ile Leu Ser Leu Phe Leu Gly Ile Ala Ala Cys Ile Leu Ile
 35 40 45
 Ala Leu Ser Gly Leu Leu Pro Asn Thr Leu Leu Ile Ile Ala Leu Ser
 50 55 60
 Leu Ile Ser Ile Ile Val Leu Ser Thr Gly Ile Ser Leu Leu Ile Gly
 65 70 75 80
 Thr Gln Cys Ser Lys Ser Val Gln Lys Asp Glu Gln Lys Pro Lys Ser
 85 90 95
 Ile Phe Pro Lys Glu Thr Pro Ser Leu Asp Pro Trp Leu Leu Asn Pro
 100 105 110
 Leu Lys Asn Lys Ile Gln Ser Ser Glu Thr Leu Leu Leu Asp Pro Thr
 115 120 125
 Ser Ile Asn Leu Lys Asn Glu Leu Phe Phe Pro Ser Phe Glu Glu Trp
 130 135 140
 Lys Lys Ile Phe Leu Lys Asp Pro Asp Phe Leu Ile Lys Ser Ala Leu
 145 150 155 160
 Ala Asn Trp Lys Ile Leu Glu Gln Asp Glu Gln Tyr Ile Leu Ser His
 165 170 175
 Ile His Met Asp Pro Arg Ile Phe Val Thr Ser Glu Pro Leu Gln Lys
 180 185 190
 Thr Tyr Gln Lys Leu Gln Glu Lys His Val Asn Asn Leu Gly Ile Ala
 195 200 205
 Ser Gln Val Ser Leu Thr Asp Leu Gln Asn Lys Thr Gln Tyr Glu Asn
 210 215 220
 Asn Leu Ile Glu Thr Thr Thr Asn Glu Ile Thr Tyr Tyr Phe Pro Val
 225 230 235 240
 Val His Asn Pro Asp Ile Leu Arg Ser Glu Trp Asp Pro Ile Ser Asn
 245 250 255
 Gln Leu Tyr Leu Ile Phe Lys Lys Phe Phe Ile His Tyr His Asn Leu
 260 265 270
 Phe Ser Thr Ala Leu Glu Arg Asn Gln Ile Leu Leu Ile Asp Ser Leu
 275 280 285
 Asn Thr Gly Ser Ser Asn Pro Ile Ala Arg Gln Met Glu Leu Leu Ala
 290 295 300
 Phe Leu Cys Val Phe Glu Gln Leu Asp Tyr Asn Glu Asp Glu Tyr Thr
 305 310 315 320
 Ile Glu Pro Arg Asp Tyr Phe Asn Arg Phe Val Tyr Xaa Xaa Ser Xaa
 325 330 335
 Thr Ala Pro Gln Ile Gln Ser Phe Gly Leu Leu His Gly Tyr Glu Glu
 340 345 350
 Met Ser Tyr Ala Ser Asn Asn Ile Arg Asn Val Leu Thr His Ser Ile
 355 360 365
 Val Leu Cys Ser Pro Ile Leu Tyr Gln Leu Ile Thr Glu Phe Asp Thr
 370 375 380
 Thr Lys Ile His Ala Asp Asp Phe Asp Cys Leu Ile
 385 390 395
 <210>148
 <211>266
 <212>PRT

<213>Chlamydia pneumoniae

<400>148

Phe Ser Ser Leu Lys Lys Glu Arg Phe Ser Leu Ser Leu Ala Ile Phe
 1 5 10 15
 Leu Ile Phe Phe Phe Thr Ser Ala Tyr Val Phe Pro Ser Ile Cys Phe
 20 25 30
 Leu Glu Leu Phe Met Glu Asn Ala Met Ser Ser Ser Phe Val Tyr Asn
 35 40 45
 Gly Pro Ser Trp Ile Leu Lys Thr Ser Val Ala Gln Glu Val Phe Lys
 50 55 60
 Lys His Gly Lys Gly Ile Gln Val Leu Leu Ser Thr Ser Val Met Leu
 65 70 75 80
 Phe Ile Gly Leu Gly Val Cys Ala Phe Ile Xaa Pro Gln Xaa Leu Ile
 85 90 95
 Val Phe Val Leu Thr Ile Asp Leu Leu Met Leu Ala Ile Ser Leu Val
 100 105 110
 Leu Phe Leu Leu Lys Val Leu Tyr Ala Pro Ser Met Val Asp Arg Leu
 115 120 125
 Trp Cys Ser Glu Lys Gly Tyr Ala Leu His Gln His Glu Asn Gly Pro
 130 135 140
 Phe Leu Asp Val Lys Arg Val Gln Gln Ile Leu Leu Arg Ser Pro Tyr
 145 150 155 160
 Ile Lys Val Arg Ala Leu Trp Pro Ser Gly Asp Ile Pro Glu Asp Pro
 165 170 175
 Ser Gln Ala Ala Val Leu Leu Leu Ser Pro Trp Thr Phe Phe Ser Ser
 180 185 190
 Val Asp Val Glu Ala Leu Leu Pro Ser Pro Gln Glu Lys Glu Gly Lys
 195 200 205
 Tyr Ile Asp Pro Val Leu Pro Lys Leu Ser Arg Ile Glu Arg Val Ser
 210 215 220
 Leu Leu Val Phe Leu Ser Ala Phe Thr Leu Asp Asp Leu Asn Glu Gln
 225 230 235 240
 Gly Val Asn Pro Leu Met Asn Asn Glu Glu Phe Leu Phe Phe Ile Asn
 245 250 255
 Lys Lys Ala Arg Asp Met Gly Phe Arg Ile
 260 265

<210>149

<211>119

<212>PRT

<213>Chlamydia pneumoniae

<400>149

His Gly Ile Gln Asp Leu Lys His Glu Ile Met Ser Ser Leu Glu Lys
 1 5 10 15
 Thr Gly Val Pro Leu Asp Pro Ser Met Ser Phe Gln Val Ser Gln Ala
 20 25 30
 Met Phe Ser Val Tyr Arg Tyr Leu Arg Gln Arg Asp Leu Thr Thr Ser
 35 40 45
 Glu Leu Arg Cys Phe His Leu Leu Ser Cys Phe Lys Gly Asp Val Val
 50 55 60
 His Cys Leu Ala Ser Phe Glu Asn Pro Lys Asp Leu Ala Asp Ser Asp
 65 70 75 80
 Phe Leu Glu Ala Cys Lys Asn Val Glu Trp Gly Glu Phe Ile Ser Ala
 85 90 95
 Cys Glu Lys Ala Leu Leu Lys Asn Pro Gln Gly Ile Ser Ile Lys Asp
 100 105 110
 Leu Lys Gln Phe Leu Val Arg
 115

<210>150

<211>326

<212>PRT

<213>Chlamydia pneumoniae

<400>150

Ser Met Ile Glu Phe Ala Phe Val Pro His Thr Ser Val Thr Ala Asp
 1 5 10 15

Arg Ile Glu Asp Arg Met Ala Cys Arg Met Asn Lys Leu Ser Thr Leu
 20 25 30
 Ala Ile Thr Ser Leu Cys Val Leu Ile Ser Ser Val Cys Ile Met Ile
 35 40 45
 Gly Ile Leu Cys Ile Ser Gly Thr Val Gly Thr Tyr Ala Phe Val Val
 50 55 60
 Gly Ile Ile Phe Ser Val Leu Ala Leu Val Ala Cys Val Phe Phe Leu
 65 70 75 80
 Tyr Phe Phe Tyr Phe Ser Ser Glu Glu Phe Lys Cys Ala Ser Ser Gln
 85 90 95
 Glu Phe Arg Phe Leu Pro Ile Pro Ala Val Val Ser Ala Leu Arg Ser
 100 105 110
 Tyr Glu Tyr Ile Ser Gln Asp Ala Ile Asn Asp Val Ile Lys Asp Thr
 115 120 125
 Met Gln Leu Ser Thr Leu Ser Ser Leu Leu Asp Pro Glu Ala Phe Phe
 130 135 140
 Leu Glu Phe Pro Tyr Phe Asn Ser Leu Ile Val Asn His Ser Met Lys
 145 150 155 160
 Glu Ala Asp Arg Leu Ser Arg Glu Ala Phe Leu Ile Leu Leu Gly Glu
 165 170 175
 Ile Thr Trp Lys Asp Cys Glu Thr Lys Ile Leu Pro Trp Leu Lys Asp
 180 185 190
 Pro Asn Ile Thr Pro Asp Asp Phe Trp Lys Leu Leu Lys Asp His Phe
 195 200 205
 Asp Leu Lys Asp Phe Lys Lys Arg Ile Ala Thr Trp Ile Arg Lys Ala
 210 215 220
 Tyr Pro Glu Ile Arg Leu Pro Lys Lys His Cys Leu Asp Lys Ser Ile
 225 230 235 240
 Tyr Lys Gly Cys Cys Lys Phe Leu Leu Leu Ala Glu Asn Asp Val Gln
 245 250 255
 Tyr Gln Arg Leu Leu His Lys Val Cys Tyr Phe Ser Gly Glu Phe Pro
 260 265 270
 Ala Met Val Leu Gly Leu Gly Ser Glu Val Pro Met Val Leu Gly Leu
 275 280 285
 Pro Lys Val Pro Lys Asp Leu Thr Trp Glu Met Phe Met Glu Asn Met
 290 295 300
 Pro Val Leu Leu Gln Ser Lys Arg Glu Gly His Trp Lys Ile Ser Leu
 305 310 315 320
 Glu Asp Val Ala Ser Leu
 325

<210>151

<211>257

<212>PRT

<213>Chlamydia pneumoniae

<400>151

Met Phe Lys Leu Leu Lys Asn Leu Phe Leu Ile Gly Cys Cys Ile Val
 1 5 10 15
 Gly Tyr Phe Trp Met Arg Lys Glu Ser Ile Val Glu Gln Trp Leu Ser
 20 25 30
 Asn Arg Leu His Thr Gln Val Thr Val Gly Arg Val Ser Ile Arg Thr
 35 40 45
 Ser Gly Ile Lys Ile Arg His Ile Cys Ile His Asn Pro Leu Ala Ser
 50 55 60
 Glu Arg Phe Pro Tyr Ala Ala Glu Ile Glu Tyr Ala Asp Val Arg Phe
 65 70 75 80
 Ser Ser Ile Ser Met Leu Leu Thr Lys Gln Leu Glu Ile Ser Glu Leu
 85 90 95
 Ile Ile His Gly Ala Asn Phe Thr Ile Phe Pro Tyr Asp Ser His Gly
 100 105 110
 Thr Lys Thr Asn Trp Ser Leu Val Trp Lys Asn Phe His Pro Gln Lys
 115 120 125
 Glu Thr Pro Ser Asn Leu Trp Ile Asp Arg Ala Pro Val Leu Ile Arg
 130 135 140
 Arg Cys Leu Phe Leu Asn Thr Arg Leu Tyr Gly Leu Arg Ala Asn His

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145 150 155 160
 Lys Asp Ile Pro His Leu Ser Val Pro Ser Leu Glu Phe His Ser His
 165 170 175
 Thr Ser Ser Ala Lys Glu Leu Pro Lys Leu Ser Glu Ala Leu Pro Ser
 180 185 190
 Leu Leu Tyr Leu Ala Leu Glu Glu Ser Leu Tyr His Leu Asn Leu Pro
 195 200 205
 Gly Asp Ile Ile Lys Pro Leu Ser Gln Gln Ala His Lys His Phe Tyr
 210 215 220
 Ser Ser Tyr Pro Gln Phe Gln Asp Arg Leu Asn Asp Ile Asn Thr Pro
 225 230 235 240
 Gly Thr Pro Thr Glu Glu Ile Ile Gly Phe Ile Arg Gly Leu Phe Phe
 245 250 255
 His

<210>152

<211>83

<212>PRT

<213>Chlamydia pneumoniae

<400>152

Ser Lys Glu Gly Arg Ala Ser Glu Ser Phe Gly Asn Ser Leu Ala Glu
 1 5 10 15
 Leu Val Trp Leu Trp Asn Ser Lys Asp Gly Thr Glu Arg Trp Gly Met
 20 25 30
 Ser Leu Trp Leu Ala Leu Ser Pro Tyr Asn Arg Val Phe Arg Asn Arg
 35 40 45
 His Leu Arg Met Ser Thr Gly Ala Arg Ser Ile His Lys Phe Glu Gly
 50 55 60
 Val Ser Phe Cys Gly Trp Lys Phe Phe His Thr Lys Asp Gln Phe Val
 65 70 75 80
 Phe Val Pro

<210>153

<211>544

<212>PRT

<213>Chlamydia pneumoniae

<400>153

Met Ala Ala Lys Asn Ile Lys Tyr Asn Glu Glu Ala Arg Xaa Lys Ile
 1 5 10 15
 His Lys Gly Val Lys Thr Leu Ala Glu Ala Val Lys Val Thr Leu Gly
 20 25 30
 Pro Lys Gly Arg His Val Val Ile Asp Lys Ser Phe Gly Ser Pro Gln
 35 40 45
 Val Thr Lys Asp Gly Val Thr Val Ala Lys Glu Ile Glu Leu Glu Asp
 50 55 60
 Lys His Glu Asn Met Gly Ala Gln Met Val Lys Glu Val Ala Ser Lys
 65 70 75 80
 Thr Ala Asp Lys Ala Gly Asp Gly Thr Thr Thr Ala Thr Val Leu Ala
 85 90 95
 Glu Ala Ile Tyr Ser Glu Gly Leu Arg Asn Val Thr Ala Gly Ala Asn
 100 105 110
 Pro Met Asp Leu Lys Arg Gly Ile Asp Lys Ala Val Lys Val Val Val
 115 120 125
 Asp Glu Leu Lys Lys Ile Ser Lys Pro Val Gln His His Lys Glu Ile
 130 135 140
 Ala Gln Val Ala Thr Ile Ser Ala Asn Asn Asp Ser Glu Ile Gly Asn
 145 150 155 160
 Leu Ile Ala Glu Ala Met Glu Lys Val Gly Lys Asn Gly Ser Ile Thr
 165 170 175
 Val Glu Glu Ala Lys Gly Phe Glu Thr Val Leu Asp Val Val Glu Gly
 180 185 190
 Met Asn Phe Asn Arg Gly Tyr Leu Ser Ser Tyr Phe Ser Thr Asn Pro
 195 200 205
 Glu Thr Gln Glu Cys Val Leu Glu Asp Ala Leu Ile Leu Ile Tyr Asp

210 215 220
 Lys Lys Ile Ser Gly Ile Lys Asp Phe Leu Pro Val Leu Gln Gln Val
 225 230 235 240
 Ala Glu Ser Gly Arg Pro Leu Leu Ile Ile Ala Glu Glu Ile Glu Gly
 245 250 255
 Glu Ala Leu Ala Thr Leu Val Val Asn Arg Leu Arg Ala Gly Phe Arg
 260 265 270
 Val Cys Ala Val Lys Ala Pro Gly Phe Gly Asp Arg Arg Lys Ala Met
 275 280 285
 Leu Glu Asp Ile Ala Ile Leu Thr Gly Gly Gln Leu Val Ser Glu Glu
 290 295 300
 Leu Gly Met Lys Leu Glu Asn Thr Thr Leu Ala Met Leu Gly Lys Ala
 305 310 315 320
 Lys Lys Val Ile Val Thr Lys Glu Asp Thr Thr Ile Val Glu Gly Leu
 325 330 335
 Gly Asn Lys Pro Asp Ile Gln Ala Arg Cys Asp Asn Ile Lys Lys Gln
 340 345 350
 Ile Glu Asp Ser Thr Ser Asp Tyr Asp Lys Glu Lys Leu Gln Glu Arg
 355 360 365
 Leu Ala Lys Leu Ser Gly Gly Val Ala Val Ile Arg Val Gly Ala Ala
 370 375 380
 Thr Glu Ile Glu Met Lys Glu Lys Lys Asp Arg Val Asp Asp Ala Gln
 385 390 395 400
 His Ala Thr Ile Ala Ala Val Glu Glu Gly Ile Leu Pro Gly Gly Gly
 405 410 415
 Thr Ala Leu Val Arg Cys Ile Pro Thr Leu Glu Ala Phe Leu Pro Met
 420 425 430
 Leu Ala Asn Glu Asp Glu Ala Ile Gly Thr Arg Ile Ile Leu Lys Ala
 435 440 445
 Leu Thr Ala Pro Leu Lys Gln Ile Ala Ser Asn Ala Gly Lys Glu Gly
 450 455 460
 Ala Ile Ile Cys Gln Gln Val Leu Ala Arg Ser Ala Asn Glu Gly Tyr
 465 470 475 480
 Asp Ala Leu Arg Asp Ala Tyr Thr Asp Met Ile Asp Ala Gly Ile Leu
 485 490 495
 Asp Pro Thr Lys Val Thr Arg Ser Ala Leu Glu Ser Ala Ala Ser Ile
 500 505 510
 Ala Gly Leu Leu Leu Thr Thr Glu Ala Leu Ile Ala Asp Ile Pro Glu
 515 520 525
 Glu Lys Ser Ser Ser Ala Pro Ala Met Pro Ser Ala Gly Met Asp Tyr
 530 535 540

<210>154

<211>102

<212>PRT

<213>Chlamydia pneumoniae

<400>154

Met Ser Asp Gln Ala Thr Thr Leu Arg Ile Lys Pro Leu Gly Asp Arg
 1 5 10 15
 Ile Leu Val Lys Arg Glu Glu Glu Glu Ala Thr Ala Arg Gly Gly Ile
 20 25 30
 Ile Leu Pro Asp Thr Ala Lys Arg Lys Gln Asp Arg Ala Glu Val Leu
 35 40 45
 Val Leu Gly Thr Gly Lys Arg Thr Asp Asp Gly Thr Leu Leu Pro Phe
 50 55 60
 Glu Val Gln Val Gly Asp Ile Ile Leu Met Asp Lys Tyr Ala Gly Gln
 65 70 75 80
 Glu Ile Thr Ile Asp Asp Glu Glu Tyr Val Ile Leu Gln Ser Ser Glu
 85 90 95
 Ile Met Ala Val Leu Lys
 100

<210>155

<211>617

<212>PRT

<213>Chlamydia pneumoniae

<400>155
 Lys Gly Val Pro Ser Leu Met Thr Thr Glu Leu Lys Thr Glu Ala Leu
 1 5 10 15
 Pro Thr Arg Thr Gln Val Asp Pro Lys His Cys Trp Asp Thr Thr Leu
 20 25 30
 Met Tyr Ala Asn Arg Glu Glu Trp Lys Lys Asp Phe Asp Leu Cys Ser
 35 40 45
 Ser Gly Lys Asp Arg Ser Pro Ile Trp Pro Glu Phe Ser Pro Ser His
 50 55 60
 Tyr Gln Ile Asp Asn Pro Glu Ser Leu Leu Glu Leu Leu Ser Lys Lys
 65 70 75 80
 Phe Ser Val Glu Arg Lys Leu Asp Gln Leu Tyr Ile Tyr Ala His Leu
 85 90 95
 Ile His Asp Gln Asp Ile Thr Asn Pro Glu Gly Glu Ser Asp Tyr Gln
 100 105 110
 Ser Ile Val Tyr Leu Tyr Thr Leu Phe Ser Gln Glu Ile Ser Trp Ile
 115 120 125
 Gln Pro Ala Xaa Ile Ala Leu Ser Glu Glu Lys Val Ala Ala Leu Leu
 130 135 140
 Ser Ser Ser Val Leu Ala Pro Tyr Arg Phe Tyr Leu Glu Lys Ile Phe
 145 150 155 160
 Arg Leu Ser Pro His Thr Gly Thr Ala Asn Glu Glu Lys Ile Leu Ala
 165 170 175
 Ser Ser Phe Ala Ala Leu Asn Val Ser Asn Lys Ala Phe Ser Ser Leu
 180 185 190
 Ser Asp Ala Glu Ile Pro Phe Gly Ile Ala Lys Asp Ser Asn Gly Glu
 195 200 205
 Glu His Pro Leu Ser His Ala Leu Ala Ser Leu Tyr Met Gln Ser Pro
 210 215 220
 Asp Gln Glu Leu Arg Arg Thr Ala Tyr Leu Ala Gln Phe Gln Arg Tyr
 225 230 235 240
 Tyr Asp Tyr Arg Asn Thr Phe Ala Asn Leu Leu Asn Gly Lys Val Gln
 245 250 255
 Ala His Leu Phe Glu Ala Lys Ala Arg Asn Tyr Pro Ser Cys Leu Glu
 260 265 270
 Ala Ser Leu Phe Gln His Asn Ile Pro Thr Thr Val Tyr Ile Asn Leu
 275 280 285
 Ile Asn Glu Thr Lys Lys His Thr Ser Leu Ile Asn Arg Tyr Phe Asn
 290 295 300
 Leu Lys Lys Glu Ala Leu Asn Leu Lys Glu Phe His Phe Tyr Asp Val
 305 310 315 320
 Tyr Ala Pro Ile Ser Gln Thr Thr Ser Lys Asn Tyr Ser Tyr Glu Glu
 325 330 335
 Gly Val Asp Leu Val Cys Lys Ser Leu Leu Pro Leu Gly Thr His Tyr
 340 345 350
 Val Glu Ile Leu Arg Asn Gly Leu Leu Ser Asn Arg Trp Val Asp Arg
 355 360 365
 Tyr Glu Asn Lys His Lys Arg Ser Gly Ala Tyr Ser Ser Gly Cys Tyr
 370 375 380
 Asp Ser Ala Pro Tyr Ile Leu Leu Asn Tyr Thr Asn Thr Leu Tyr Asp
 385 390 395 400
 Val Ser Val Ile Ala His Glu Ala Gly His Ser Met His Ser Tyr Phe
 405 410 415
 Ser Arg Glu Ala Gln Pro Tyr His Asp Ala Gln Tyr Pro Leu Phe Leu
 420 425 430
 Ala Glu Ile Ala Ser Thr Phe Asn Glu Met Leu Leu Met Glu Ala Leu
 435 440 445
 Ser Lys Ser Asp Gln Ser Lys Glu Asp Lys Ile Val Ile Ile Thr Lys
 450 455 460
 Thr Leu Asp Thr Ile Phe Ala Thr Leu Phe Arg Gln Thr Phe Phe Ala
 465 470 475 480
 Ala Phe Glu Tyr Glu Ile His Ser Ala Ala Glu Gln Gly Thr Pro Leu
 485 490 495
 Thr Glu Glu Phe Leu Ser Ala Thr Tyr Gly Asn Leu Gln Lys Glu Phe

500 505 510
 Tyr Gly Gly Val Val Thr Ser Asp Ser Leu Ser Ala Leu Glu Trp Ala
 515 520 525
 Arg Ile Pro His Phe Tyr Tyr Asn Phe Tyr Val Tyr Gln Tyr Ala Thr
 530 535 540
 Gly Ile Ile Ala Ala Leu Ser Phe Ala Glu Lys Xaa Leu Thr Gln Glu
 545 550 555 560
 Pro Gly Ala Leu Glu Leu Tyr Leu Lys Phe Leu Lys Ser Gly Arg Ser
 565 570 575
 Asp Phe Pro Leu Asn Ile Leu Lys Lys Ser Gly Leu Asp Met Thr Thr
 580 585 590
 Ser Ala Pro Leu Asp Lys Ala Phe Ala Phe Ile Thr Lys Lys Ile Asp
 595 600 605
 Leu Leu Ser Ser Leu Leu Ser Glu Asp
 610 615
 <210>156
 <211>251
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>156
 Met Asn Val Ala Asp Leu Leu Ser His Leu Glu Thr Leu Leu Ser Ser
 1 5 10 15
 Lys Ile Phe Gln Asp Tyr Gly Pro Asn Gly Leu Gln Val Gly Asp Pro
 20 25 30
 Gln Thr Pro Val Lys Lys Ile Ala Val Ala Val Thr Ala Asp Leu Glu
 35 40 45
 Thr Ile Lys Gln Ala Val Ala Glu Ala Asn Val Leu Ile Val His
 50 55 60
 His Gly Ile Phe Trp Lys Gly Met Pro Tyr Pro Ile Thr Gly Met Ile
 65 70 75 80
 His Lys Arg Ile Gln Leu Leu Ile Glu His Asn Ile Gln Leu Ile Ala
 85 90 95
 Tyr His Leu Pro Leu Asp Ala His Pro Thr Leu Gly Asn Asn Trp Arg
 100 105 110
 Val Ala Leu Asp Leu Asn Trp His Asp Leu Lys Pro Phe Gly Ser Ser
 115 120 125
 Leu Pro Tyr Leu Gly Val Gln Gly Ser Phe Ser Pro Ile Asp Ile Asp
 130 135 140
 Ser Phe Ile Asp Leu Leu Ser Arg Tyr Tyr Gln Ala Pro Leu Lys Gly
 145 150 155 160
 Ser Ala Leu Gly Gly Pro Ser Arg Val Ser Ser Ala Ala Leu Ile Ser
 165 170 175
 Gly Gly Ala Tyr Arg Glu Leu Ser Ser Ala Ala Thr Ser Gln Val Asp
 180 185 190
 Cys Phe Ile Thr Gly Asn Phe Asp Glu Pro Ala Trp Ser Thr Ala Leu
 195 200 205
 Glu Ser Asn Ile Asn Phe Leu Ala Phe Gly His Thr Ala Thr Glu Lys
 210 215 220
 Val Gly Pro Lys Ser Leu Ala Glu His Leu Lys Ser Glu Phe Pro Ile
 225 230 235 240
 Ser Thr Thr Phe Ile Asp Ala Ala Asn Pro Phe
 245 250
 <210>157
 <211>449
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>157
 Met Trp Lys Leu Thr Lys Arg Asn Ser Met Leu Asn Cys Ser Asn Gln
 1 5 10 15
 Lys His Thr Val Thr Phe Glu Glu Ala Cys Gln Val Phe Pro Gly Gly
 20 25 30
 Val Asn Ser Pro Val Arg Ala Cys Arg Ser Val Gly Val Thr Pro Pro
 35 40 45
 Ile Val Ser Ser Ala Gln Gly Asp Ile Phe Leu Asp Thr His Gly Arg

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50 55 60
 Glu Phe Ile Asp Phe Cys Gly Gly Trp Gly Ala Leu Ile His Gly His
 65 70 75 80
 Ser His Pro Lys Ile Val Lys Ala Ile Gln Lys Thr Ala Leu Lys Gly
 85 90 95
 Thr Ser Tyr Gly Leu Thr Ser Glu Glu Glu Ile Leu Phe Ala Thr Met
 100 105 110
 Leu Leu Ser Ser Leu Lys Leu Lys Glu His Lys Ile Arg Phe Val Ser
 115 120 125
 Ser Gly Thr Glu Ala Thr Met Thr Ala Val Arg Leu Ala Arg Gly Ile
 130 135 140
 Thr Asn Arg Ser Ile Ile Lys Phe Ile Gly Gly Tyr His Gly His
 145 150 155 160
 Ala Asp Thr Leu Leu Gly Gly Ile Ser Thr Thr Glu Glu Thr Ile Asp
 165 170 175
 Asn Leu Thr Ser Leu Ile His Thr Pro Ser Pro His Ser Leu Leu Ile
 180 185 190
 Ser Leu Pro Tyr Asn Asn Ser Gln Ile Leu His His Val Met Glu Ala
 195 200 205
 Leu Gly Pro Gln Val Ala Gly Ile Ile Phe Glu Pro Ile Cys Ala Asn
 210 215 220
 Met Gly Ile Val Leu Pro Lys Ala Glu Phe Leu Asp Asp Ile Ile Glu
 225 230 235 240
 Leu Cys Lys Arg Phe Gly Ser Leu Ser Ile Met Asp Glu Val Val Thr
 245 250 255
 Gly Phe Arg Val Ala Phe Gln Gly Ala Gln Asp Ile Phe Asn Leu Ser
 260 265 270
 Pro Asp Ile Thr Ile Tyr Gly Lys Ile Leu Gly Gly Gly Leu Pro Ala
 275 280 285
 Ala Ala Leu Val Gly His Arg Ser Ile Leu Asp His Leu Met Pro Glu
 290 295 300
 Gly Thr Ile Phe Gln Ala Gly Thr Met Ser Gly Asn Phe Leu Ala Met
 305 310 315 320
 Ala Thr Gly His Ala Ala Ile Gln Leu Cys Gln Ser Glu Gly Phe Tyr
 325 330 335
 Asp His Leu Ser Gln Leu Glu Ala Leu Phe Tyr Ser Pro Ile Glu Glu
 340 345 350
 Glu Ile Arg Ser Gln Gly Phe Pro Val Ser Leu Val His Gln Gly Thr
 355 360 365
 Met Phe Ser Leu Phe Phe Thr Glu Ser Ala Pro Thr Asn Phe Asp Glu
 370 375 380
 Ala Lys Asn Ser Asp Val Glu Lys Phe Gln Thr Phe Tyr Ser Glu Val
 385 390 395 400
 Phe Asp Asn Gly Val Tyr Leu Ser Pro Ser Pro Leu Glu Ala Asn Phe
 405 410 415
 Ile Ser Ser Ala His Thr Glu Glu Asn Leu Thr Tyr Ala Gln Asn Ile
 420 425 430
 Ile Ile Asp Ser Leu Ile Lys Ile Phe Asp Ser Ser Ala Gln Arg Phe
 435 440 445
 Xaa

<210>158

<211>174

<212>PRT

<213>Chlamydia pneumoniae

<400>158

Ser Leu Leu Leu Asn Ile Asn Gln Gly Val Phe Ala Arg Ser Val Ile
 1 5 10 15
 Leu Leu Cys Glu His Ser Leu Asn Gly Ser Phe Gly Leu Ile Leu Asn
 20 25 30
 Lys Thr Leu Gly Phe Glu Ile Ser Asp Asp Ile Phe Thr Phe Glu Lys
 35 40 45
 Val Ser Asn His Asn Ile Arg Phe Cys Xaa Gly Gly Pro Leu Gln Ala
 50 55 60

Asn Gln Met Met Leu Leu His Ser Cys Ser Glu Ile Pro Glu Gln Thr
 65 70 75 80
 Leu Glu Ile Cys Pro Ser Val Tyr Leu Gly Asp Leu Pro Phe Leu
 85 90 95
 Gln Glu Ile Ala Ser Ser Glu Ser Gly Pro Glu Ile Asn Leu Cys Phe
 100 105 110
 Gly Tyr Ser Gly Trp Gln Ala Gly Gln Leu Glu Lys Glu Phe Leu Ser
 115 120 125
 Asn Asp Trp Phe Leu Ala Pro Gly Asn Lys Asp Tyr Val Phe Tyr Ser
 130 135 140
 Glu Pro Glu Asp Leu Trp Ala Leu Val Leu Lys Asp Leu Gly Gly Lys
 145 150 155 160
 Tyr Ala Ser Leu Ser Thr Val Pro Asp Asn Leu Leu Leu Asn
 165 170

<210>159

<211>124

<212>PRT

<213>Chlamydia pneumoniae

<400>159

Met Ser Leu Glu Lys Glu Leu Leu Glu Glu Thr Pro Leu Val Leu Leu
 1 5 10 15
 Asn Phe Tyr Lys Leu Val Ser Phe Cys Asn Tyr Ala Gly Met Ile Leu
 20 25 30
 Gly Thr Glu Glu Lys Lys Phe Ala Ile Tyr Gly His Val Ser Met Gly
 35 40 45
 Gln Ala Phe Gln Gly Ala Asp Thr Glu Gly His Ser Pro Gln Arg Pro
 50 55 60
 Phe Ala His Asp Leu Leu Asn Phe Val Phe Ser Gly Phe Asp Ile Gln
 65 70 75 80
 Val Leu Arg Val Val Ile Asn Asp Tyr Lys Asp Asn Val Phe Tyr Thr
 85 90 95
 Arg Leu Phe Leu Glu Gln Lys Asp Arg Glu Phe Leu Tyr Val Val Asp
 100 105 110
 Val Asp Ala Arg Pro Ser Asp Arg Ser Leu Ser Pro
 115 120

<210>160

<211>140

<212>PRT

<213>Chlamydia pneumoniae

<400>160

Ser Arg Pro Ser Ile Ala Asp Asp Gln Arg Trp Trp Arg Thr Phe Phe
 1 5 10 15
 Arg Glu Lys Ile Leu Leu Arg Ala Ala Lys Arg Ser Ile Ile Leu Val
 20 25 30
 Asp Glu Ser Lys Leu Val Pro Val Leu Gly Lys Phe Arg Val Pro Leu
 35 40 45
 Glu Ile Ser Arg Phe Gly Arg Ser Ala Ile Ile Glu Glu Ile Arg His
 50 55 60
 Leu Gly Tyr Glu Gly Glu Trp Arg Leu Gln Asp Thr Gly Asp Leu Phe
 65 70 75 80
 Ile Thr Asp Ser Ser Asn Tyr Ile Tyr Asp Ile Phe Ser Pro Asn Ser
 85 90 95
 Tyr Pro Asn Pro Glu Lys Asp Leu Leu Lys Leu Ile Gln Ile His Gly
 100 105 110
 Val Ile Glu Val Gly Phe Val Ile Glu Lys Val Glu Val Trp Ser Ser
 115 120 125
 Asn Ser Gln Gly Leu Ile Ser Lys Lys Tyr Ser Val
 130 135 140

<210>161

<211>112

<212>PRT

<213>Chlamydia pneumoniae

<400>161

Val Glu Lys Asp Leu His Leu His Glu Lys Lys Cys Leu Ala His Glu

1 5 10 15
 Ala Ala Thr Gln Val Thr Ser Gly Met Ile Leu Gly Leu Gly Ser Gly
 20 25 30
 Ser Thr Ala Lys Glu Phe Ile Phe Ala Leu Ala His Arg Ile Gln Thr
 35 40 45
 Glu Ser Leu Ala Val His Ala Ile Ala Ser Ser Gln Asn Ser Tyr Ala
 50 55 60
 Leu Ala Lys Gln Leu Ala Ile Pro Leu Leu Asn Pro Glu Lys Phe Ser
 65 70 75 80
 Ser Leu Asp Leu Thr Val Asp Gly Ala Asp Glu Val Asp Pro Gln Leu
 85 90 95
 Arg Met Ile Lys Gly Gly Gly Gly Pro Phe Ser Glu Lys Arg Phe Phe
 100 105 110
 <210>162
 <211>378
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>162
 Arg Arg Thr Ile Met Asn Thr Ser Leu Lys Arg Pro Leu Lys Ser His
 1 5 10 15
 Phe Asp Val Val Gly Ser Phe Leu Arg Pro Glu His Leu Lys Lys Thr
 20 25 30
 Arg Glu Ser Leu Lys Glu Gly Ser Ile Ser Leu Asp Gln Leu Met Gln
 35 40 45
 Ile Glu Asp Ile Ala Ile Gln Asp Leu Ile Lys Lys Gln Lys Ala Ala
 50 55 60
 Gly Leu Ser Phe Ile Thr Asp Gly Glu Phe Arg Arg Ala Thr Trp His
 65 70 75 80
 Tyr Asp Phe Met Trp Gly Phe His Gly Val Gly His His Arg Ala Thr
 85 90 95
 Glu Gly Val Phe Phe Asp Gly Glu Arg Ala Met Ile Asp Asp Thr Tyr
 100 105 110
 Leu Thr Asp Lys Ile Ser Val Ser His His Pro Phe Val Asp His Phe
 115 120 125
 Lys Phe Val Lys Ala Leu Glu Asp Glu Phe Thr Thr Ala Lys Gln Thr
 130 135 140
 Leu Pro Ala Pro Ala Gln Phe Leu Lys Gln Met Ile Phe Pro Asn Asn
 145 150 155 160
 Ile Glu Val Thr Arg Lys Phe Tyr Pro Thr Asn Gln Glu Leu Ile Glu
 165 170 175
 Asp Ile Val Ala Gly Tyr Arg Lys Val Ile Arg Asp Leu Tyr Asp Ala
 180 185 190
 Gly Cys Arg Tyr Leu Gln Leu Asp Asp Cys Thr Arg Gly Gly Leu Val
 195 200 205
 Asp Pro Arg Val Cys Ser Trp Tyr Gly Ile Asp Glu Lys Gly Leu Gln
 210 215 220
 Asp Leu Ile Gln Gln Tyr Leu Leu Ile Asn Asn Leu Val Ile Ala Asp
 225 230 235 240
 Arg Pro Asp Asp Leu Val Val Asn Leu His Val Cys Arg Gly Asn Tyr
 245 250 255
 His Ser Lys Phe Phe Ala Ser Gly Ser Tyr Asp Phe Ile Ala Lys Pro
 260 265 270
 Leu Phe Glu Gln Thr Asn Val Asp Gly Tyr Tyr Leu Glu Phe Asp His
 275 280 285
 Glu Arg Ser Gly Asp Phe Ser Pro Leu Thr Phe Ile Ser Gly Glu Lys
 290 295 300
 Thr Val Cys Leu Gly Leu Val Thr Ser Lys Thr Pro Thr Leu Glu Asn
 305 310 315 320
 Lys Asp Glu Val Ile Ala Arg Ile His Gln Ala Ala Asp Tyr Leu Pro
 325 330 335
 Leu Glu Arg Leu Ser Leu Ser Pro Gln Cys Gly Phe Ala Ser Cys Glu
 340 345 350
 Ile Gly Asn Lys Leu Thr Glu Glu Glu Gln Trp Ala Lys Val Ala Leu
 355 360 365

Val Lys Glu Ile Ser Glu Glu Val Trp Lys
 370 375
 <210>163
 <211>872
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>163
 Val Leu Gly Val Asn Phe Met Glu Lys Phe Ser Asp Ala Val Ser Glu
 1 5 10 15
 Ala Leu Glu Lys Ala Phe Glu Leu Ala Lys Ser Ser Lys His Thr Tyr
 20 25 30
 Val Thr Glu Asn His Leu Leu Leu Ala Leu Leu Glu Asn Thr Glu Ser
 35 40 45
 Leu Phe Tyr Leu Val Ile Lys Asp Ile His Gly Asn Pro Gly Leu Leu
 50 55 60
 Asn Thr Ala Val Lys Asp Ala Leu Ser Arg Glu Pro Thr Val Val Glu
 65 70 75 80
 Gly Glu Val Asp Pro Lys Pro Ser Pro Gly Leu Gln Thr Leu Leu Arg
 85 90 95
 Asp Ala Lys Gln Glu Ala Lys Thr Leu Gly Asp Glu Tyr Ile Ser Gly
 100 105 110
 Asp His Leu Leu Ala Phe Trp Ser Ser Asn Lys Glu Pro Phe Asn
 115 120 125
 Ser Trp Lys Gln Thr Thr Lys Val Ser Phe Lys Asp Leu Lys Asn Leu
 130 135 140
 Ile Thr Lys Ile Arg Arg Gly Asn Arg Met Asp Ser Pro Ser Ala Glu
 145 150 155 160
 Ser Asn Phe Gln Gly Leu Glu Lys Tyr Cys Lys Asn Leu Thr Ala Leu
 165 170 175
 Ala Arg Glu Gly Lys Leu Asp Pro Val Ile Gly Arg Asp Glu Glu Ile
 180 185 190
 Arg Arg Thr Ile Gln Val Leu Ser Arg Arg Thr Lys Asn Asn Pro Met
 195 200 205
 Leu Ile Gly Glu Pro Gly Val Gly Lys Thr Ala Ile Ala Glu Gly Leu
 210 215 220
 Ala Leu Arg Leu Ile Gln Gly Asp Val Pro Glu Ser Leu Lys Gly Lys
 225 230 235 240
 Gln Leu Tyr Val Leu Asp Met Gly Ala Leu Ile Ala Gly Ala Lys Tyr
 245 250 255
 Arg Gly Glu Phe Glu Glu Arg Leu Lys Ser Val Leu Lys Asp Val Glu
 260 265 270
 Ser Gly Asp Gly Glu His Ile Ile Phe Ile Asp Glu Val His Thr Leu
 275 280 285
 Val Gly Ala Gly Ala Thr Asp Gly Ala Met Asp Ala Ala Asn Leu Leu
 290 295 300
 Lys Pro Ala Leu Ala Arg Gly Thr Leu His Cys Ile Gly Ala Thr Thr
 305 310 315 320
 Leu Asn Glu Tyr Gln Lys Tyr Ile Glu Lys Asp Ala Ala Leu Glu Arg
 325 330 335
 Arg Phe Gln Pro Ile Phe Val Thr Glu Pro Ser Leu Glu Asp Ala Val
 340 345 350
 Phe Ile Leu Arg Gly Leu Arg Glu Lys Tyr Glu Ile Phe His Gly Val
 355 360 365
 Arg Ile Thr Glu Gly Ala Leu Asn Ala Ala Val Leu Leu Ser Tyr Arg
 370 375 380
 Tyr Ile Pro Asp Arg Phe Leu Pro Asp Lys Ala Ile Asp Leu Ile Asp
 385 390 395 400
 Glu Ala Ala Ser Leu Ile Arg Met Gln Ile Gly Ser Leu Pro Leu Pro
 405 410 415
 Ile Asp Glu Lys Glu Arg Glu Leu Ala Ala Leu Ile Val Lys Gln Glu
 420 425 430
 Ala Ile Lys Arg Glu Gln Ser Pro Ser Tyr Gln Glu Glu Ala Asp Ala
 435 440 445
 Met Gln Lys Ser Ile Asp Ala Leu Arg Glu Glu Leu Ala Ser Leu Arg

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450 455 460
 Leu Gly Trp Asp Glu Glu Lys Lys Leu Ile Ser Gly Leu Lys Glu Lys
 465 470 475 480
 Lys Asn Ser Leu Glu Ser Met Lys Phe Ser Glu Glu Ala Glu Arg
 485 490 495
 Val Ala Asp Tyr Asn Arg Val Ala Glu Leu Arg Tyr Ser Leu Ile Pro
 500 505 510
 Gln Leu Glu Glu Glu Ile Lys Gln Asp Glu Ala Ser Leu Asn Gln Arg
 515 520 525
 Asp Asn Arg Leu Leu Gln Glu Glu Val Asp Glu Arg Leu Ile Ala Gln
 530 535 540
 Val Val Ala Asn Trp Thr Gly Ile Pro Val Gln Lys Met Leu Glu Gly
 545 550 555 560
 Glu Ala Glu Lys Leu Leu Ile Leu Glu Glu Ser Leu Glu Glu Arg Val
 565 570 575
 Val Gly Gln Pro Phe Ala Val Ser Ala Val Ser Asp Ser Ile Arg Ala
 580 585 590
 Ala Arg Val Gly Leu Asn Asp Pro Gln Arg Pro Leu Gly Val Phe Leu
 595 600 605
 Phe Leu Gly Pro Thr Gly Val Gly Lys Thr Glu Leu Ala Lys Ala Leu
 610 615 620
 Ala Asp Leu Leu Phe Asn Lys Glu Glu Ala Met Val Arg Phe Asp Met
 625 630 635 640
 Ser Glu Tyr Met Glu Lys His Ser Ile Ser Lys Leu Ile Gly Ser Ser
 645 650 655
 Pro Gly Tyr Val Gly Tyr Glu Glu Gly Gly Ser Leu Ser Glu Ala Leu
 660 665 670
 Arg Arg Arg Pro Tyr Ser Val Val Leu Phe Asp Glu Ile Glu Lys Ala
 675 680 685
 Asp Lys Glu Val Leu Asn Ile Leu Leu Gln Val Phe Asp Asp Gly Ile
 690 695 700
 Leu Thr Asp Gly Lys Lys Arg Lys Val Asn Cys Lys Asn Ala Leu Phe
 705 710 715 720
 Ile Met Thr Ser Asn Ile Gly Ser Pro Glu Leu Ala Asp Tyr Cys Ser
 725 730 735
 Lys Lys Gly Ser Glu Leu Thr Lys Glu Ala Ile Leu Ser Val Val Ser
 740 745 750
 Pro Val Leu Lys Arg Tyr Leu Ser Pro Glu Phe Met Asn Arg Ile Asp
 755 760 765
 Glu Ile Leu Pro Phe Val Pro Leu Thr Lys Glu Asp Ile Val Lys Ile
 770 775 780
 Val Gly Ile Gln Met Arg Arg Ile Ala Gln Arg Leu Lys Ala Arg Arg
 785 790 795 800
 Ile Asn Leu Ser Trp Asp Asp Ser Val Ile Leu Phe Leu Ser Glu Gln
 805 810 815
 Gly Tyr Asp Ser Ala Phe Gly Ala Arg Pro Leu Lys Arg Leu Ile Gln
 820 825 830
 Gln Lys Val Val Ile Leu Leu Ser Lys Ala Leu Leu Lys Gly Asp Ile
 835 840 845
 Lys Pro Asp Thr Ser Ile Glu Leu Thr Met Ala Lys Glu Val Leu Val
 850 855 860
 Phe Lys Lys Val Glu Thr Pro Ser
 865 870
 <210>164
 <211>182
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>164
 Asn Cys Ala Ala Ser Phe Ile Trp Leu Asn Lys Ser Ser His Arg Asn
 1 5 10 15
 Leu Arg Ser Pro Met Phe Lys Ser Phe Ile Val Arg Tyr Met Phe Val
 20 25 30
 Gly Gly Leu Val Ser Phe Leu Leu Pro Ile Pro Asp Leu Glu Cys Ala
 35 40 45

Asn Asn Val Thr Lys Thr Tyr Asp Lys Lys Ala Ser Val Ile Ser Arg
 50 55 60
 Asp Leu Lys Leu Gln Glu Asp Cys Gln Lys Phe Trp Asn Leu Asp Pro
 65 70 75 80
 Tyr Lys Leu Glu Ser Leu Cys Ala Tyr Gln Val Leu Tyr His Asp Asp
 85 90 95
 Tyr Ser Ser Lys Arg Ile Arg Glu Leu Phe Pro Gln Ile Gln Lys Asp
 100 105 110
 Glu Val Pro Ile Phe Ala Thr Met Ile Leu Thr Leu Gly Lys Val Asp
 115 120 125
 Arg Gly Phe Ser Pro Glu Glu Ile Ser Leu Ile Gln Lys Leu Ser Tyr
 130 135 140
 Pro Gly Leu Ser Leu Ala Ser Leu Arg Gly Ser Thr Glu Ile Arg Pro
 145 150 155 160
 Glu Tyr Arg Phe Gly Ser Cys Phe Ser Ser Val Gly Val Phe Trp Arg
 165 170 175
 Phe Arg Glu Glu Pro Ser
 180

<210>165

<211>399

<212>PRT

<213>Chlamydia pneumoniae

<400>165

Glu Gly Leu Gln Lys Leu Asp Pro Asn Thr Asp Leu Ala Arg Ala Leu
 1 5 10 15
 Val Val Ser Glu Phe Ser Gly Asp Leu Gly Lys Asn Arg Ala Asp Tyr
 20 25 30
 Tyr Ser Asn Cys Leu Asp Ile Leu Ala Leu Arg Ile His Ala Glu Arg
 35 40 45
 Gln Arg Tyr Leu Asp Gln Ser Pro Cys Val Pro Gly Thr Ser Glu Phe
 50 55 60
 His Lys Ala Thr Ile Glu Ala Ile Asn Thr Ile Leu Phe Tyr Glu Glu
 65 70 75 80
 Ala Val Arg Tyr Pro Ser Lys Lys Glu Met Phe Ser Asp Glu Phe Ser
 85 90 95
 Phe Leu Ser Ser Val Thr Asp Arg Lys Phe Gly Val Cys Leu Gly Val
 100 105 110
 Ser Ser Leu Tyr Phe Ser Leu Ser Gln Arg Leu Asp Leu Pro Leu Glu
 115 120 125
 Ala Val Thr Pro Pro Gly His Ile Tyr Leu Arg Tyr Gln Gly Gly Glu
 130 135 140
 Val Asn Ile Glu Thr Thr Ala Gly Gly Arg His Leu Pro Thr Ala Ser
 145 150 155 160
 Tyr Cys Asp Cys Leu Asp Leu Glu Asp Leu Gln Val Arg Thr Pro Glu
 165 170 175
 Glu Met Ile Gly Leu Thr Phe Met Asn Gln Gly Ser Phe Ala Leu Gln
 180 185 190
 Lys Lys Lys Tyr Lys Glu Ala Glu Glu Ala Tyr Lys Lys Ala Gln Glu
 195 200 205
 Tyr Leu Gly Asp Glu Glu Leu Gln Glu Leu Leu Gly Phe Val Gln Ile
 210 215 220
 Leu Gly Gly Lys Lys Lys Glu Gly Lys Ser Leu Ile Gly Lys Ser Pro
 225 230 235 240
 Arg Ala Ser Gln Lys Gly Ser Val Ala Tyr Asp Tyr Leu Lys Gly Arg
 245 250 255
 Ile Asn Ile Pro Thr Leu Ala Leu Leu Phe Ser Tyr Pro Gly Ser Asn
 260 265 270
 Tyr Glu Glu Ile Ala Ser Tyr Glu Glu Glu Leu Lys Lys Ala Met Lys
 275 280 285
 Ser Ser Met Pro Cys Cys Glu Gly Gln Arg Arg Leu Ala Ser Val Ala
 290 295 300
 Phe His Leu Gly Lys Thr Ala Glu Ala Val Ala Leu Leu Glu Lys Cys
 305 310 315 320
 Val Glu Asp Ile Pro Asn Asp Leu Ser Leu His Leu Arg Leu Cys Lys

WO 99/27105

PCT/IB98/01890

325 330 335
 Ile Leu Cys Asp Arg His Glu Tyr Thr Lys Ala Leu Lys Tyr Phe Ile
 340 345 350
 Ile Ala Glu Arg Leu Met Glu Asp Gln Gly Phe Leu Lys Lys Asp Asn
 355 360 365
 Arg Ser Phe Ala Leu Phe Tyr Glu Val Lys Lys Ile Ile Ser Lys Val
 370 375 380
 Ala Pro Gln Lys Ala Asn Thr Leu Leu Leu Met Glu Ser Glu Arg
 385 390 395

<210>166

<211>167

<212>PRT

<213>Chlamydia pneumoniae

<400>166

Ile Ile Val Gly Ile Ser Met Ser Ser Ser Glu Val Val Phe Gln Thr
 1 5 10 15
 Val His Gly Leu Gly Phe Gly Gly Leu Ser Ser Lys Ser Val Val Pro
 20 25 30
 Phe Lys Lys Ser Leu Ser Asp Ala Pro Arg Val Val Cys Ser Ile Leu
 35 40 45
 Val Leu Thr Leu Gly Leu Gly Ala Leu Val Cys Gly Ile Ala Ile Thr
 50 55 60
 Cys Trp Cys Val Pro Gly Val Ile Leu Met Gly Gly Ile Cys Ala Ile
 65 70 75 80
 Val Leu Gly Ala Ile Ser Leu Ala Leu Ser Leu Phe Trp Leu Trp Gly
 85 90 95
 Leu Phe Ser Asn Cys Cys Gly Ser Lys Arg Val Leu Pro Gly Glu Gly
 100 105 110
 Leu Leu Arg Asp Lys Leu Leu Asp Gly Gly Phe Ser Arg Ala Ala Pro
 115 120 125
 Ser Gly Met Gly Leu Pro Gly Asp Gly Ser Pro Arg Ala Ser Thr Pro
 130 135 140
 Ser Cys Leu Glu Glu Leu Gln Ala Glu Ile Gln Ala Val Thr Gln Ala
 145 150 155 160
 Ile Asp Gln Met Ser Asp Asp
 165

<210>167

<211>145

<212>PRT

<213>Chlamydia pneumoniae

<400>167

Leu Pro Ala Pro Glu Leu Arg Ser Ser Trp Val Lys Gly Asp Pro Pro
 1 5 10 15
 Pro Arg Pro Ala Ser Pro Ala Thr Pro Pro Ser Arg Gly Gly Val Ala
 20 25 30
 Glu Phe Leu Ser Leu Gly Ser Pro Leu Phe Pro Gly Leu Gly Ile Ser
 35 40 45
 Ala Leu Gly Ile Leu Ser Ser Leu Lys Val Ile Ser Ile Ala Gln Ala
 50 55 60
 Asn Asn Ala Thr Pro Ser Ser Ile Val Ile Ala Pro Ala Ala Ile Pro
 65 70 75 80
 Lys Gly Gln Gln Pro Ala Arg Thr Thr Arg Pro Ser Pro Ser Lys Glu
 85 90 95
 Ile Ala Thr Thr Ala Met Ile Ala Ala Ile Thr Asp Leu Ala Ile Leu
 100 105 110
 Val Ala Leu Ser Ser Val Leu Asn Ala Gly Ile Ala Ser Leu Glu Gln
 115 120 125
 Phe Thr His Pro Thr Asp Val Ala Ala Asp Val Thr Ala Ser Phe Ile
 130 135 140

Asp

145

<210>168

<211>538

<212>PRT

<213>Chlamydia pneumoniae

<400>168

Gly Lys Trp Trp Arg Val Ser Ser Met Glu Ser Glu Lys Asp Ile Gly
 1 5 10 15
 Ala Lys Phe Leu Gly Asp Tyr Arg Ile Leu Tyr Arg Lys Gly Gln Ser
 20 25 30
 Leu Trp Ser Glu Asp Leu Leu Ala Glu His Arg Phe Ile Lys Lys Arg
 35 40 45
 Tyr Leu Ile Arg Leu Leu Leu Pro Asp Leu Gly Ser Ser Gln Pro Phe
 50 55 60
 Met Glu Ala Phe His Asp Val Val Val Lys Leu Ala Lys Leu Asn His
 65 70 75 80
 Pro Gly Ile Leu Ser Ile Glu Asn Val Ser Glu Ser Glu Gly Arg Cys
 85 90 95
 Phe Leu Val Thr Gln Glu Gln Asp Ile Pro Ile Leu Ser Leu Thr Gln
 100 105 110
 Tyr Leu Lys Ser Ile Pro Arg Lys Leu Thr Glu Leu Glu Ile Val Asp
 115 120 125
 Ile Val Ser Gln Leu Ala Ser Leu Leu Asp Tyr Val His Ser Glu Gly
 130 135 140
 Leu Ala Gln Glu Glu Trp Asn Leu Asp Ser Val Tyr Ile His Ile Leu
 145 150 155 160
 Asn Gly Val Pro Lys Val Ile Leu Pro Asp Leu Gly Phe Ala Ser Leu
 165 170 175
 Ile Lys Glu Arg Ile Leu Asp Gly Phe Ile Ser Asp Glu Glu Asn Arg
 180 185 190
 Glu Ser Lys Ile Lys Glu Arg Val Leu Leu His Thr Ser Glu Gly Lys
 195 200 205
 Gln Gly Arg Glu Asp Thr Tyr Ala Phe Gly Ala Ile Thr Tyr Tyr Leu
 210 215 220
 Leu Phe Gly Phe Leu Pro Gln Gly Ile Phe Pro Met Pro Ser Lys Val
 225 230 235 240
 Phe Ser Asp Phe Ile Tyr Asp Trp Asp Phe Leu Ile Ser Ser Cys Leu
 245 250 255
 Ser Cys Phe Met Glu Glu Arg Ala Lys Glu Leu Phe Pro Leu Ile Arg
 260 265 270
 Lys Lys Thr Leu Gly Glu Glu Leu Gln Asn Val Val Thr Asn Cys Ile
 275 280 285
 Glu Ser Ser Leu Arg Glu Val Pro Asp Pro Leu Glu Ser Ser Gln Asn
 290 295 300
 Leu Pro Gln Ala Val Leu Lys Val Gly Glu Thr Lys Val Ser His Gln
 305 310 315 320
 Gln Lys Glu Ser Ala Glu His Leu Glu Phe Val Leu Val Glu Ala Cys
 325 330 335
 Ser Ile Asp Glu Ala Met Asp Thr Ala Ile Glu Ser Glu Ser Ser Ser
 340 345 350
 Gly Val Glu Glu Glu Gly Tyr Ser Leu Ala Leu Gln Ser Leu Leu Val
 355 360 365
 Arg Glu Pro Val Val Ser Arg Tyr Val Glu Ala Glu Lys Glu Glu Pro
 370 375 380
 Lys Pro Gln Pro Ile Leu Thr Glu Met Val Leu Ile Glu Gly Gly Glu
 385 390 395 400
 Phe Ser Arg Gly Ser Val Glu Gly Gln Arg Asp Glu Leu Pro Val His
 405 410 415
 Lys Val Ile Leu His Ser Phe Phe Leu Asp Val His Pro Val Thr Asn
 420 425 430
 Glu Gln Phe Asn Arg Tyr Leu Glu Cys Cys Gly Ser Glu Gln Asp Lys
 435 440 445
 Tyr Tyr Asn Glu Leu Ile Arg Leu Arg Asp Ser Arg Ile Gln Arg Arg
 450 455 460
 Ser Gly Arg Leu Val Ile Glu Pro Gly Tyr Ala Lys His Pro Val Val
 465 470 475 480
 Gly Val Thr Trp Tyr Gly Ala Ser Gly Tyr Ala Glu Trp Ile Gly Lys
 485 490 495

Arg Leu Pro Thr Glu Ala Glu Trp Glu Ile Ala Ala Ser Gly Gly Val
 500 505 510
 Ala Cys Tyr Ala Ile Pro Val Gly Arg Lys Ser Lys Lys Ala Gly Gln
 515 520 525
 Ile Phe Ser Leu Arg Ile Arg Gln Gln Ser
 530 535
 <210>169
 <211>662
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>169
 Met Lys Glu Glu Asn Ser Gln Ala His Tyr Leu Ala Leu Cys Arg Glu
 1 5 10 15
 Leu Glu Asp His Asp Tyr Ser Tyr Tyr Val Leu His Arg Pro Arg Ile
 20 25 30
 Ser Asp Tyr Glu Tyr Asp Met Lys Leu Arg Lys Leu Leu Glu Ile Glu
 35 40 45
 Arg Ser His Pro Glu Trp Lys Val Leu Trp Ser Pro Ser Thr Arg Leu
 50 55 60
 Gly Asp Arg Pro Ser Gly Thr Phe Ser Val Val Ser His Lys Glu Pro
 65 70 75 80
 Met Leu Ser Ile Ala Asn Ser Tyr Ser Lys Glu Glu Leu Ser Glu Phe
 85 90 95
 Phe Ser Arg Val Glu Lys Ser Leu Gly Thr Ser Pro Arg Tyr Thr Val
 100 105 110
 Glu Leu Lys Ile Asp Gly Ile Ala Val Ala Ile Arg Tyr Glu Asp Arg
 115 120 125
 Val Leu Val Gln Ala Leu Ser Arg Gly Asn Gly Lys Gln Gly Glu Asp
 130 135 140
 Ile Thr Ser Asn Ile Arg Thr Ile Arg Ser Leu Pro Leu Arg Leu Pro
 145 150 155 160
 Glu Asp Ala Pro Glu Phe Ile Glu Val Arg Gly Glu Val Phe Phe Ser
 165 170 175
 Tyr Ser Thr Phe Gln Ile Ile Asn Glu Lys Gln Gln Gln Leu Glu Lys
 180 185 190
 Thr Ile Phe Ala Asn Pro Arg Asn Ala Ala Gly Gly Thr Leu Lys Leu
 195 200 205
 Leu Ser Pro Gln Glu Ser Arg Lys Arg Lys Leu Glu Ile Ser Ile Tyr
 210 215 220
 Asn Leu Ile Ala Pro Gly Asp Asn Asp Ser His Tyr Glu Asn Leu Gln
 225 230 235 240
 Arg Cys Leu Glu Trp Gly Phe Pro Val Ser Gly Lys Pro Arg Leu Cys
 245 250 255
 Ser Thr Pro Glu Glu Val Ile Ser Val Leu Lys Thr Ile Glu Thr Glu
 260 265 270
 Arg Ala Ser Leu Pro Met Glu Ile Asp Gly Ala Val Ile Lys Val Asp
 275 280 285
 Ser Leu Ala Ser Gln Arg Val Leu Gly Ala Thr Gly Lys His Tyr Arg
 290 295 300
 Trp Ala Leu Ala Tyr Lys Tyr Ala Pro Glu Glu Ala Glu Thr Leu Leu
 305 310 315 320
 Glu Asp Ile Leu Val Gln Val Gly Arg Thr Gly Val Leu Thr Pro Val
 325 330 335
 Ala Lys Leu Thr Pro Val Leu Leu Ser Gly Ser Leu Val Ser Arg Ala
 340 345 350
 Ser Leu Tyr Asn Glu Asp Glu Ile His Arg Lys Asp Ile Arg Ile Gly
 355 360 365
 Asp Thr Val Cys Val Ala Lys Gly Gly Glu Val Ile Pro Lys Val Val
 370 375 380
 Arg Val Cys Arg Glu Lys Arg Pro Glu Gly Ser Glu Val Trp Asn Met
 385 390 395 400
 Pro Glu Phe Cys Pro Val Cys His Ser His Val Val Arg Glu Glu Asp
 405 410 415
 Arg Val Ser Val Arg Cys Val Asn Pro Glu Cys Val Ala Gly Ala Ile

420 425 430
 Glu Lys Ile Arg Phe Phe Val Gly Arg Gly Ala Leu Asn Ile Asp His
 435 440 445
 Leu Gly Val Lys Val Ile Thr Lys Leu Phe Glu Leu Gly Leu Val His
 450 455 460
 Thr Cys Ala Asp Leu Phe Gln Leu Thr Thr Glu Asp Leu Met Gln Ile
 465 470 475 480
 Pro Gly Ile Arg Glu Arg Ser Ala Arg Asn Ile Leu Glu Ser Ile Glu
 485 490 495
 Gln Ala Lys His Val Asp Leu Asp Arg Phe Leu Val Ala Leu Gly Ile
 500 505 510
 Pro Leu Ile Gly Ile Gly Val Ala Thr Val Leu Ala Gly His Phe Glu
 515 520 525
 Thr Leu Asp Arg Val Ile Ser Ala Thr Phe Glu Glu Leu Ser Leu
 530 535 540
 Glu Gly Ile Gly Glu Lys Val Ala His Ala Ile Ala Glu Tyr Phe Ser
 545 550 555 560
 Asp Ser Thr His Leu Asn Glu Ile Lys Lys Met Gln Asp Leu Gly Val
 565 570 575
 Cys Ile Ser Pro Tyr His Lys Ser Gly Ser Thr Cys Phe Gly Lys Ala
 580 585 590
 Phe Val Ile Thr Gly Thr Leu Glu Gly Met Ser Arg Leu Asp Ala Glu
 595 600 605
 Thr Ala Ile Arg Asn Cys Gly Gly Lys Val Gly Ser Ser Val Ser Lys
 610 615 620
 Gln Thr Asp Tyr Val Val Met Gly Asn Asn Pro Gly Ser Lys Leu Glu
 625 630 635 640
 Lys Ala Arg Lys Leu Gly Val Ser Ile Leu Asp Gln Glu Ala Phe Thr
 645 650 655
 Asn Leu Ile His Leu Glu
 660

<210>170

<211>441

<212>PRT

<213>Chlamydia pneumoniae

<400>170

Ile Ile Tyr Tyr Lys Phe Phe Tyr Ser Tyr Asn Cys Pro Tyr Phe Ile
 1 5 10 15
 Ser Phe Phe Val Leu Leu Gly Val Asn Met Ala Ser Ser Ser Asn Asn
 20 25 30
 Ser Thr Lys Gln Asp Gly Ile Pro Ser Trp Val Asn Pro Asn Val Gln
 35 40 45
 Trp Asn Arg Ala Ser Gln Val Gly Asp Gln Glu Ala Asn Ser Leu Thr
 50 55 60
 Pro Glu Ala Gln Thr Ser Arg Ser Trp Phe Ser Asp Arg Lys His Phe
 65 70 75 80
 Leu Glu Val Leu Asp Val Ser Leu Glu Glu Met Glu Asn Asn Asp Leu
 85 90 95
 Lys Lys Tyr Ser Arg Tyr Lys Thr Ile Ile Leu Ile Ala Thr Leu Val
 100 105 110
 Thr Val Ala Ile Thr Cys Ile Val Pro Ile Ser Met Val Phe Gly Ile
 115 120 125
 Pro Met Trp Val Pro Cys Leu Ile Leu Phe Gly Ala Gly Leu Ser Ser
 130 135 140
 Ala Phe Leu Ser His Arg Leu Gln Ser Lys Cys Lys Glu Ile His Leu
 145 150 155 160
 Arg Tyr Arg Ala Tyr Gln Ile Tyr Arg Gln Gln Leu Leu Ser Gln Tyr
 165 170 175
 Pro Asp Leu Arg Lys Ser Thr Leu Tyr Lys Tyr Ser Ile Thr His Val
 180 185 190
 Lys Pro Lys Lys Gly Phe Val Gly Lys Leu Val Glu Asn Leu Arg Pro
 195 200 205
 Asp Leu His Lys Asn Lys Asp Asp Gly Gly Ala Ala Ala Asp Ser Arg
 210 215 220

Leu Asp Phe Ala Gly Tyr Gly Val Lys His Tyr Gln Thr Asp Ala Leu
 225 230 235 240
 Leu Gly Val Ser Gly Val Asn Ser Val Glu Trp Gln Arg Leu Ala Ser
 245 250 255
 Leu Ile Met Ser Val Lys Asn Asp Ile Leu Asn Asp Val Gly Ser Arg
 260 265 270
 Glu Pro Ile Asp Lys Ala Gln Arg Ser Ala Leu Val Val Ser Gly Lys
 275 280 285
 Asp Ile Gly Gly Glu Ile Gln Pro Gly Gly Ile Leu Asp Ile Ser Arg
 290 295 300
 Asp Ile Leu Ala Ile Cys Gly Tyr Gly Met Asn Val Gly Val Glu Ala
 305 310 315 320
 Lys Lys Ala Ile Asp Gln Tyr Lys Lys Trp Tyr Leu Asn Ser Ser Thr
 325 330 335
 Phe Ile Ala Trp Asn Pro Gln Leu Pro Ala Ile Ala Gln Ser Tyr Leu
 340 345 350
 Leu Glu Gln Gln Arg His Leu Asp Tyr Ala Ala Lys Ile Phe Gln Asp
 355 360 365
 Leu Ser Ala Leu Thr Thr Ala His Gly Thr Gly Gln Ala Leu Glu Asp
 370 375 380
 Leu Asp Ser Leu Leu Cys Tyr Tyr Asp Gln Leu Ile Glu Ser Lys Gly
 385 390 395 400
 Val Gly Glu Lys Ile Ile Ala Ser Ile His Gln Lys Ala Ser Arg Leu
 405 410 415
 Ser Asn Ala Arg Phe Leu Arg Ser Gly Thr Phe Lys Glu Met Val Glu
 420 425 430
 Ser Ile Pro Arg Val Phe Asn Tyr Tyr
 435 440

<210>171

<211>1156

<212>PRT

<213>Chlamydia pneumoniae

<400>171

His Arg Phe Thr Arg Lys His Leu Asp Leu Ala Met Gln Asp Ser Cys
 1 5 10 15
 Asp Gln Glu His Leu Lys Lys Trp Ser Asn Leu Tyr His Val Phe Ser
 20 25 30
 Ile Thr Ile Lys Glu Phe Thr Glu Gly Lys Leu Glu Gln Asn Glu Val
 35 40 45
 Val Ser Arg Ile Gln Arg Leu Arg Gly Lys Leu Glu Lys Ser Lys Cys
 50 55 60
 Ser Ile Leu Gly Asn Cys Arg Thr Asn Ala Glu Tyr Ala Thr Lys Ser
 65 70 75 80
 Glu Lys Lys Leu Ala Asp Tyr Leu Leu Gln Ile Gly Asp Arg Glu Pro
 85 90 95
 Phe Leu Thr Gly Met His Lys Ala Ile Ala Thr Gly Lys Ala Ile Gln
 100 105 110
 Gly Lys Val Glu Gly Val Ile Ser Gln His Pro Glu Lys Gln Ile Met
 115 120 125
 Met Leu Arg Cys Ser Ile Glu Arg Leu Glu Gly Met Leu Arg Arg Glu
 130 135 140
 Asp Trp Gly Ala Ile Leu Gln Lys Asn Glu Asp Glu Val Leu Ala Leu
 145 150 155 160
 Lys Ser Thr Met Glu Ala Gln Leu Gln Gly Phe Lys Asp Leu Val Gly
 165 170 175
 Thr Trp Glu Gly Lys Tyr Gln Glu Phe Lys Lys Asn Lys Leu Ser Lys
 180 185 190
 Val Leu Val Tyr Asp Phe Thr Lys Ser Tyr Ser Asn Leu Leu Asn Arg
 195 200 205
 Leu Glu Val Leu His Ala Glu Ser Ser Thr Asp Asp Leu Val Leu His
 210 215 220
 Val Asp Arg Met Ser Glu Asp Leu Lys Lys Thr Ile Glu Glu Ile Asp
 225 230 235 240
 Gly Asn Leu Phe Gln Val Thr Pro Glu Glu Leu Ser Leu Leu Ala Arg

PCT/LB98/01890

451

755 760 765
 Leu Asn Val Thr Ala Ser Gln Gly Leu Cys Arg His Gln Met Gln Ala
 770 775 780
 Ser Phe Arg Glu Arg Ile Leu Leu Asn Pro Asp Gly Ala Lys His Gly
 785 790 795 800
 Glu Ala Glu Arg Thr Leu Ala Ser Arg Glu Glu Met Leu Lys Thr Leu
 805 810 815
 Gly Leu Ser Tyr Leu Thr Pro Phe Val Arg Phe Ser Ser Pro Glu Ser
 820 825 830
 Thr Gln Ser Gly Tyr Asn Gln Ile Leu Lys Val Arg Glu Gln Leu Phe
 835 840 845
 Asp Ile Glu Gln Arg Leu Gln Asn Gln Glu Thr Val Ser Pro Glu Asp
 850 855 860
 Tyr Ala Ala Val Gln Ala Leu Ala Ala Tyr Val Arg Lys His Glu
 865 870 875 880
 Ser Leu Ile Val Ser Thr Tyr Gly Leu Gly Ala Gln Glu Gly Gln Thr
 885 890 895
 Ser Ser Lys Val Thr Thr Leu Met Arg Asp Leu His Ala Val Glu Glu
 900 905 910
 Leu Val Glu Met Gly Val Glu Thr Tyr Arg Leu Asn Arg Ser Asp Gln
 915 920 925
 Ile Leu His Arg Val His Ser Val Leu His Ser His Leu Arg Asp Ser
 930 935 940
 Asp Ser Ser Gly Asn Gly Ile Ile Asp Val Val Lys Lys Leu Phe Glu
 945 950 955 960
 Leu Leu Asn Asn Asn Gly Asn Asn Pro Asn Asp Pro Glu Cys Gln Lys
 965 970 975
 Tyr Met Gln Ile Leu Leu Asp Ala Pro Val Ser Leu Leu Tyr Gly Ala
 980 985 990
 Phe Lys Ser Phe Lys Asn Glu Phe Leu Leu Asn Phe Thr Glu Leu Asn
 995 1000 1005
 Ile Ala Asn Ser Thr Lys Ala Ala Glu Glu Glu Ala Lys Arg Tyr Val
 1010 1015 1020
 Glu Glu Lys Gly Arg Gly Phe Glu Thr Tyr Trp Glu Glu Ala Lys Gln
 1025 1030 1035 1040
 Arg Leu Glu Ala Ile Ala Ala Glu Leu Asp Asp Leu Arg Asn Gln Glu
 1045 1050 1055
 Thr Leu Leu Glu Gln Glu Ile Arg Leu Ala Asn Leu Lys Ile Ser Ile
 1060 1065 1070
 Phe Ser Asp Leu Asn Leu Arg Glu Lys Val Ser Val Glu Lys Ala Ala
 1075 1080 1085
 Leu Glu Glu Glu Ile Gln Gly Ile Gln Glu Gln Tyr Ala Glu Met Gln
 1090 1095 1100
 Gly Ile Glu Asp Leu Glu Lys Gln Lys Phe Glu Asp Leu Gln Lys
 1105 1110 1115 1120
 Lys Leu Glu Ala Leu Glu Glu Arg Leu Leu Gln Ile Gly Arg Arg Ile
 1125 1130 1135
 Asp Ser Ser Val Asp Lys Gln Lys Glu Leu Leu Gly Leu Leu Gly Arg
 1140 1145 1150
 Glu Glu Ala Ala
 1155
 <210>172
 <211>518
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>172
 Cys Tyr Glu Asn Leu Phe His Tyr Pro Arg Ala Ser Met Ala Asp Ile
 1 5 10 15
 Leu Val Ile Gly Ala Asn Pro Thr Gly Leu Ile Leu Ala Asn Met Leu
 20 25 30
 Ile Gln His Gly Ile Ser Val Lys Val Ile Asp His Arg Ala Ser Pro
 35 40 45
 Glu Asp Pro Ser Phe Leu Asp Cys Arg Lys Leu Pro Val Ile Leu Ser
 50 55 60

Cys Ser Ser Leu Glu Leu Leu His Asn Ser Glu Met Leu Gly Asp Phe
 65 70 75 80
 Ile Gln Ala Asn His Lys Ile Phe Gly Ala Arg Tyr His Trp Lys Lys
 85 90 95
 Arg Thr Leu Leu Phe Lys Phe Ser Gln Ala Thr Asp Ser Pro Val Pro
 100 105 110
 Phe Ser Leu Ser Thr Thr Tyr Gln Ser Leu Glu Gln His Leu Ile Asp
 115 120 125
 Glu Phe Leu Lys Arg Gly Gly Val Ile Asp Trp Ser Thr Arg Pro Val
 130 135 140
 Thr Leu Val Asp Asn Ser Ile Phe Ile Glu Ser Thr Lys Val Ser Gln
 145 150 155 160
 Asn Phe Glu Asn Arg Glu Ile Tyr Asn Pro Lys Trp Ile Ile Ala Cys
 165 170 175
 Glu Ala Asp Asn Asn Leu Asp Ile Arg Asp Leu Val Lys Ser Gln Leu
 180 185 190
 Arg Ala Arg Arg Ile Asn Arg Glu Val Ile Phe Ile Asn Cys Asp Glu
 195 200 205
 Gly Glu Pro Phe Glu Glu Asp His Ile His Leu Leu Pro Ile Thr Lys
 210 215 220
 Asn Phe Leu Asn Phe Val Phe Tyr Asn Pro Gln Glu Lys Thr Lys Gln
 225 230 235 240
 Leu Cys Leu Pro Gln Gly Thr His Ser Ile Ser Pro Lys Leu Lys Gln
 245 250 255
 Lys Leu Leu Tyr Thr Tyr Asn Leu Val Ile Ser Asp Glu Asn Phe His
 260 265 270
 Ile Lys Thr Ser His His Ala Phe Pro Pro Glu His Gly Asn Val Leu
 275 280 285
 Phe Leu Gly Ser Leu Ser Asn Thr Leu Leu Leu Ser Tyr Leu Asn Gly
 290 295 300
 Ile Asn Thr Asn Ile His Ala Ala Phe Asn Leu Ala Trp Lys Leu Leu
 305 310 315 320
 Pro Val Leu Lys Lys Ala Ala Leu Lys His Leu Val Ile Thr Lys Glu
 325 330 335
 Gln Glu Asp Gly Asn Ile Leu Pro Tyr Ile Ser Pro Thr Thr Glu Lys
 340 345 350
 Arg Ala Lys Lys Leu Pro Phe Ser Arg Phe Tyr Thr Pro Ala Leu Met
 355 360 365
 Tyr Tyr Phe Leu Lys Gly Cys Arg Lys Phe Asn Thr Thr Gly Glu Glu
 370 375 380
 Tyr Tyr Tyr Pro Pro His Gln Ala Leu Lys Tyr Arg Ser Ser Asp Ile
 385 390 395 400
 Ile Lys Met Ser Pro Gln Asp Lys Glu Ile His Gly Pro Gly Pro Gly
 405 410 415
 Met Arg Ala Ile Asp Ala Arg Leu Glu Asn Gly Ser Phe Leu Leu Asp
 420 425 430
 Pro Leu Lys Ser Ser Lys His Leu Leu Ile Phe Phe Lys Asp Ile Pro
 435 440 445
 Asp Leu Lys Glu Ala Leu Gln Glu Glu Tyr Gly Glu Trp Ile Glu Ile
 450 455 460
 Cys Asn Val Lys Glu Pro Arg Ile Leu Asn Leu Tyr His Ala Asn Pro
 465 470 475 480
 Asn Ser Leu Phe Ile Ile Arg Pro Asp Arg Tyr Ile Gly Tyr Arg Thr
 485 490 495
 His Thr Phe Lys Leu His Glu Leu Ile Ser Tyr Leu Leu Arg Ile Phe
 500 505 510
 Ala Ser Glu Lys Thr Ser
 515

<210>173

<211>319

<212>PRT

<213>Chlamydia pneumoniae

<400>173

Leu Ile Lys Met Arg Lys Val Ala Phe Leu Val Ser Cys Leu Phe Ser
 515

1 5 10 15
 Val Ala Ile Gly Ala Ser Ala Ala Pro Val Arg Val Pro Gly Phe Pro
 20 25 30
 Gln Ile Pro Glu Asp Xaa Val Gln Ile Lys Thr Glu Val Cys Pro Lys
 35 40 45
 Gln Glu Val Cys Leu Ala Val Thr Ile Lys Cys Asp Asp His Asn Leu
 50 55 60
 Ile Gly Val Leu His Leu Pro Asn Thr Pro Thr Pro Glu Gly Gly Phe
 65 70 75 80
 Pro Thr Val Val Leu Phe His Gly Phe Arg Gly Thr Lys Phe Gly Gly
 85 90 95
 Leu Thr Gly Ala Tyr Arg Lys Leu Gly Arg Lys Phe Ala Ala Ala Gly
 100 105 110
 Ile Ala Thr Leu Arg Val Asp Met Ala Gly Cys Gly Asp Ser Glu Gly
 115 120 125
 Val Ala Glu Glu Val Pro Ile Glu Thr Tyr Leu Arg Asp Ala Gln Thr
 130 135 140
 Ile Leu Glu Thr Val Gln Glu His Pro Asp Leu Asn Ala Tyr Arg Leu
 145 150 155 160
 Gly Ile Ser Gly Phe Ser Leu Gly Cys His Ile Ala Phe Glu Leu Ala
 165 170 175
 Lys Ile Tyr Asn Pro Arg Asp Leu Asn Ile Lys Ala Leu Ser Val Trp
 180 185 190
 Ala Pro Ile Ala Asp Gly Gly Ile Leu Leu Lys Glu Leu Tyr Glu Asn
 195 200 205
 Phe Ser Lys His Gly Glu Gly Asp Ile Ile Ser Val Gly Lys Asp Phe
 210 215 220
 Gly Phe Gly Pro Pro Pro Ile Ile Val Cys Ser Gly Asp Val Asp Leu
 225 230 235 240
 Leu Ile Arg Ile Gln Asp His Val Thr Ala Asn Ser Leu Pro Thr Lys
 245 250 255
 Pro Tyr Ile Leu His Gln Gln Gly Ile Asp Asp Thr Leu Val Ser Arg
 260 265 270
 Thr Gln Gln Thr Leu Phe Lys Asn Thr Ala Pro Gly Arg Met Thr Phe
 275 280 285
 Ile Ser Tyr Pro Asn Thr Gly His Asn Leu Ala Thr Ala Pro Asp Leu
 290 295 300
 Asp Met Ile Leu Asp Gln Ile Val Ser His Phe Gln Arg Thr Leu
 305 310 315
 <210>174
 <211>507
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>174
 Met Arg Tyr Asp Pro Asn Leu Ile Glu Lys Lys Trp Gln Gln Phe Trp
 1 5 10 15
 Lys Glu His Arg Ser Phe Gln Ala Asn Glu Asp Glu Asp Lys Val Lys
 20 25 30
 Tyr Tyr Val Leu Asp Met Phe Pro Tyr Pro Ser Gly Ala Gly Leu His
 35 40 45
 Val Gly His Leu Ile Gly Tyr Thr Ala Thr Asp Ile Val Ala Arg Tyr
 50 55 60
 Lys Arg Ala Arg Gly Phe Ser Val Leu His Pro Met Gly Trp Asp Ser
 65 70 75 80
 Phe Gly Leu Pro Ala Glu Gln Tyr Ala Ile Arg Thr Gly Thr His Pro
 85 90 95
 Lys Val Thr Thr Gln Lys Asn Ile Ala Asn Phe Lys Lys Gln Leu Ser
 100 105 110
 Ala Met Gly Phe Ser Tyr Asp Glu Gly Arg Glu Phe Ala Thr Ser Asp
 115 120 125
 Pro Asp Tyr Tyr His Trp Thr Gln Lys Leu Phe Leu Phe Leu Tyr Asp
 130 135 140
 Gln Gly Leu Ala Tyr Met Ala Asp Met Ala Val Asn Tyr Cys Pro Glu
 145 150 155 160

Leu Gly Thr Val Leu Ser Asn Glu Glu Val Glu Asn Gly Phe Ser Ile
 165 170 175
 Glu Gly Gly Tyr Pro Val Glu Arg Lys Met Leu Arg Gln Trp Ile Leu
 180 185 190
 Lys Ile Thr Ala Tyr Ala Asp Lys Leu Leu Glu Gly Leu Asp Ala Leu
 195 200 205
 Asp Trp Pro Glu Asn Val Lys Gln Leu Gln Lys Asn Trp Ile Gly Lys
 210 215 220
 Ser Glu Gly Ala Leu Val Thr Xaa His Leu Thr Gln Glu Gly Ser Leu
 225 230 235 240
 Glu Ala Phe Thr Thr Arg Leu Asp Thr Leu Leu Gly Val Ser Phe Leu
 245 250 255
 Val Ile Ala Pro Glu His Pro Asp Leu Asp Ser Ile Val Ser Glu Glu
 260 265 270
 Gln Arg Asp Glu Val Thr Ala Tyr Val Gln Glu Ser Leu Arg Lys Ser
 275 280 285
 Glu Arg Asp Arg Ile Ser Ser Val Lys Thr Lys Thr Gly Val Phe Thr
 290 295 300
 Gly Asn Tyr Ala Lys His Pro Ile Thr Gly Asn Leu Leu Pro Val Trp
 305 310 315 320
 Ile Ser Asp Tyr Val Val Leu Gly Tyr Gly Thr Gly Val Val Met Gly
 325 330 335
 Val Pro Ala His Asp Glu Arg Asp Arg Glu Phe Ala Glu Met Phe Ser
 340 345 350
 Leu Pro Ile His Glu Val Ile Asp Asp Asn Gly Val Cys Ile His Ser
 355 360 365
 Asn Tyr Asn Asp Phe Cys Leu Asn Gly Leu Ser Gly Gln Glu Ala Lys
 370 375 380
 Asp Tyr Val Ile Asn Tyr Leu Glu Met Arg Ser Leu Gly Arg Ala Lys
 385 390 395 400
 Thr Met Tyr Arg Leu Arg Asp Trp Leu Phe Ser Arg Gln Arg Tyr Trp
 405 410 415
 Gly Glu Pro Ile Pro Ile Ile His Phe Glu Asp Gly Thr His Arg Pro
 420 425 430
 Leu Glu Asp Asp Glu Leu Pro Leu Leu Pro Pro Asn Ile Asp Asp Tyr
 435 440 445
 Arg Pro Glu Gly Phe Gly Gln Gly Pro Leu Ala Lys Ala Gln Asp Trp
 450 455 460
 Val His Ile Tyr Asp Glu Lys Thr Gly Arg Pro Gly Cys Arg Glu Thr
 465 470 475 480
 Tyr Thr Met Pro Gln Trp Ala Gly Ser Cys Trp Tyr Tyr Leu Arg Phe
 485 490 495
 Cys Asp Ala His Asn Tyr Ser Val Ala Leu Glu
 500 505

<210>175

<211>198

<212>PRT

<213>Chlamydia pneumoniae

<400>175

Arg Arg Leu Lys Ile Gly Cys Ile Ser Thr Thr Arg Arg Gln Val Asp
 1 5 10 15
 Gln Asp Val Glu Arg Leu Ile Leu Cys His Ser Gly Gln Ala Leu Ala
 20 25 30
 Gly Ile Ile Phe Val Ser Val Met His Thr Thr Thr Gln Leu Pro Trp
 35 40 45
 Ser Lys Glu Lys Glu Ser Tyr Trp Met Pro Val Asp Leu Tyr Ile Gly
 50 55 60
 Gly Ala Glu His Ala Val Leu His Leu Leu Tyr Ser Arg Phe Trp His
 65 70 75 80
 Arg Val Phe Tyr Asp Ala Gly Leu Val Ser Thr Pro Glu Pro Phe Lys
 85 90 95
 Lys Leu Ile Asn Gln Gly Leu Val Leu Ala Ser Ser Tyr Arg Ile Pro
 100 105 110
 Gly Lys Gly Tyr Val Ser Ile Glu Asp Val Arg Glu Glu Asn Gly Thr

115 120 125
 Trp Ile Ser Thr Cys Gly Glu Ile Val Glu Val Arg Gln Glu Lys Met
 130 135 140
 Ser Lys Ser Lys Leu Asn Gly Val Asp Pro Gln Val Leu Ile Glu Glu
 145 150 155 160
 Tyr Gly Ala Asp Ala Leu Arg Met Tyr Ala Met Phe Ser Gly Pro Leu
 165 170 175
 Asp Lys Asn Lys Thr Trp Ser Asn Glu Gly Val Trp Gly Val Pro Ser
 180 185 190
 Phe Pro Lys Ser Phe Leu
 195

<210>176

<211>163

<212>PRT

<213>Chlamydia pneumoniae

<400>176

Phe Gly Xaa Ser Ser Glu Val Gln Asp Ile Glu Asp Arg Asp Gly Leu
 1 5 10 15
 Val Leu Ala His Lys Leu Val Phe Arg Ile Thr Glu His Ile Glu Lys
 20 25 30
 Met Ser Leu Asn Thr Ile Pro Ser Ser Phe Met Glu Phe Leu Asn Asp
 35 40 45
 Phe Ser Lys Leu Pro Val Tyr Ser Lys Arg Ala Leu Ser Met Ala Val
 50 55 60
 Arg Val Leu Glu Pro Ile Xaa Pro His Ile Ser Glu Glu Leu Trp Val
 65 70 75 80
 Ile Leu Gly Asn Pro Gly Ile Asp Gln Ala Ala Trp Pro Gln Ile
 85 90 95
 Asp Glu Ser Tyr Leu Val Ala Gln Thr Val Thr Phe Val Val Gln Val
 100 105 110
 Asn Gly Lys Leu Arg Gly Arg Leu Glu Val Ala Lys Glu Ala Pro Lys
 115 120 125
 Glu Glu Val Leu Ser Leu Ser Arg Ser Val Val Ala Lys Tyr Leu Glu
 130 135 140
 Asn Ala Gln Ile Arg Lys Glu Ile Tyr Val Pro Asn Lys Leu Val Asn
 145 150 155 160
 Phe Val Leu

<210>177

<211>437

<212>PRT

<213>Chlamydia pneumoniae

<400>177

Met Met Leu Arg Gly Val His Arg Ile Phe Lys Cys Phe Tyr Asp Val
 1 5 10 15
 Val Leu Val Cys Ala Phe Val Ile Ala Leu Pro Lys Leu Leu Tyr Lys
 20 25 30
 Met Leu Val Tyr Gly Lys Tyr Lys Ser Leu Ala Val Arg Phe Gly
 35 40 45
 Leu Lys Lys Pro His Val Pro Gly Glu Gly Pro Leu Val Trp Phe His
 50 55 60
 Gly Ala Ser Val Gly Glu Val Arg Leu Leu Leu Pro Val Leu Glu Lys
 65 70 75 80
 Phe Cys Glu Glu Phe Pro Gly Trp Arg Cys Leu Val Thr Ser Cys Thr
 85 90 95
 Glu Leu Gly Val Gln Val Ala Ser Gln Val Phe Ile Pro Met Gly Ala
 100 105 110
 Thr Val Ser Ile Leu Pro Leu Asp Phe Ser Ile Ile Ile Lys Ser Val
 115 120 125
 Val Ala Lys Leu Arg Pro Ser Leu Ala Val Phe Ser Glu Gly Asp Cys
 130 135 140
 Trp Leu Asn Phe Ile Glu Glu Ala Lys Arg Ile Gly Ala Thr Thr Leu
 145 150 155 160
 Val Ile Asn Gly Arg Ile Ser Ile Asp Ser Ser Lys Arg Phe Lys Phe

165 170 175
 Leu Lys Arg Leu Gly Lys Asn Tyr Phe Ser Pro Val Asp Gly Phe Leu
 180 185 190
 Leu Gln Asp Glu Val Gln Lys Gln Arg Phe Leu Ser Leu Gly Ile Pro
 195 200 205
 Glu His Lys Leu Gln Val Thr Gly Asn Ile Lys Thr Tyr Val Ala Ala
 210 215 220
 Gln Thr Ala Leu His Leu Glu Arg Glu Thr Trp Arg Asp Arg Leu Arg
 225 230 235 240
 Leu Pro Thr Asp Ser Lys Leu Val Ile Leu Gly Ser Met His Arg Ser
 245 250 255
 Asp Ala Gly Lys Trp Leu Pro Val Val Gln Lys Leu Ile Lys Glu Gly
 260 265 270
 Val Ser Val Leu Trp Val Pro Arg His Val Glu Lys Thr Lys Asp Val
 275 280 285
 Glu Glu Ser Leu His Arg Leu His Ile Pro Tyr Gly Leu Trp Ser Arg
 290 295 300
 Gly Ala Asn Phe Ser Tyr Val Pro Val Val Val Val Asp Glu Ile Gly
 305 310 315 320
 Leu Leu Lys Gln Leu Tyr Val Ala Gly Asp Leu Ala Phe Val Gly Gly
 325 330 335
 Thr Phe Asp Pro Lys Ile Gly Gly His Asn Leu Leu Glu Pro Leu Gln
 340 345 350
 Cys Glu Val Pro Leu Ile Phe Gly Pro His Ile Thr Ser Gln Ser Glu
 355 360 365
 Leu Ala Gln Arg Leu Leu Leu Ser Gly Ala Gly Leu Cys Leu Asp Glu
 370 375 380
 Ile Glu Pro Ile Ile Asp Thr Val Ser Phe Leu Leu Asn Asn Gln Glu
 385 390 395 400
 Val Arg Glu Ala Tyr Val Gln Lys Gly Lys Val Phe Val Lys Ala Glu
 405 410 415
 Thr Ala Ser Phe Asp Arg Thr Trp Arg Ala Leu Lys Ser Tyr Ile Pro
 420 425 430
 Leu Tyr Lys Asn Ser
 435

<210>178

<211>179

<212>PRT

<213>Chlamydia pneumoniae

<400>178

Leu Leu Leu Glu Asp Leu Asp Thr Asp Ser Ile Pro Trp Pro Lys Leu
 1 5 10 15
 Tyr Leu Ser Glu Asp Phe Asp Phe Ala Tyr Tyr Pro Glu Ser Lys Ala
 20 25 30
 Ile Ile Asp Thr Val Ala Lys Leu Glu Lys Asn Asn Pro Gly Glu Glu
 35 40 45
 Phe Cys Leu Glu Ser Lys Lys Ile Leu Ala Arg Tyr Leu Leu Glu Gln
 50 55 60
 Leu Phe Lys Leu Glu Thr Gly Leu Asn Phe Pro Thr Ser Thr Ile Asp
 65 70 75 80
 Gly Gly Arg Glu Ser Phe Leu Ile Glu Phe Ser His Glu Thr Lys Lys
 85 90 95
 Pro Thr Val Trp Ala Phe Ile Tyr Phe Tyr Tyr Tyr His Ser Asn Gly
 100 105 110
 Pro Lys Leu Glu Lys Asp Phe Lys Gln Ala Gly Cys Glu Val His Asn
 115 120 125
 Arg Leu Leu Asn Leu Gly Leu Lys Tyr Arg Pro Gln Ala Gly Ala Gln
 130 135 140
 Asn Asp Gly Arg Asn Gly Gly Pro Tyr Gly Pro Ile Gly Phe Leu Ile
 145 150 155 160
 Val Trp Glu Glu Asn Tyr Gly Ser Val Leu Lys Asp His Gly Phe Ile
 165 170 175
 Lys Asp Asn

<210>179

<211>115

<212>PRT

<213>Chlamydia pneumoniae

<400>179

Cys Cys Phe Gly Gly Glu Thr Ala Thr Arg Ile Phe Ser Met Thr Pro
 1 5 10 15
 Ser Gly Phe Ser Leu Ala Thr Glu Glu Lys Val Gln Val Ser Thr Ala
 20 25 30
 Glu Lys Val Ile Lys Ile Leu Ala Leu Ile Phe Phe Pro Ile Ile Leu
 35 40 45
 Ile Ala Leu Ala Ile Arg Tyr Phe Leu His Arg Lys Phe Asp Arg Lys
 50 55 60
 Cys Phe Val Ile Pro Gln Asp Thr Pro Lys Glu Leu Glu Leu Ile Leu
 65 70 75 80
 Ala Ala Asn Pro Gln Leu Val Glu Lys Ala Ala Arg Glu Val His Pro
 85 90 95
 Gly Phe Phe Ala Leu Pro Thr Lys Tyr Gln Ser Met Tyr Ile Gln Thr
 100 105 110
 Ser Lys Gly
 115

<210>180

<211>544

<212>PRT

<213>Chlamydia pneumoniae

<400>180

Thr Val Glu Leu Leu Ser Leu Asn Lys Ser Tyr Phe Glu Ile Gln Arg
 1 5 10 15
 Leu Arg Tyr Arg Pro Glu Ile Leu Thr Leu Leu Glu Thr Ile Arg Ser
 20 25 30
 Lys His Ile Gln Glu Thr Ser Ser Pro Pro Ser Pro Pro Pro Glu Leu
 35 40 45
 Gln Lys His Ile Pro Asn Leu Cys Arg Ile Pro Glu Val Ser Ile Tyr
 50 55 60
 Thr Glu Gln Glu Thr Ser Ser Lys Pro Leu Lys Ile Gly Val Leu Leu
 65 70 75 80
 Ser Gly Gly Gln Ala Pro Gly Gly His Asn Val Val Ile Gly Leu Phe
 85 90 95
 Asp Ala Leu Arg Val Phe Asn Pro Lys Thr Arg Leu Phe Gly Phe Ile
 100 105 110
 Lys Gly Pro Leu Gly Leu Thr Arg Gly Leu Tyr Lys Asp Leu Asp Ile
 115 120 125
 Ser Val Ile Tyr Asp Tyr Tyr Asn Met Gly Gly Phe Asp Met Leu Ser
 130 135 140
 Ser Ser Arg Glu Lys Ile Lys Thr Glu Glu Gln Lys Lys Asn Ile Leu
 145 150 155 160
 Asn Thr Val Lys Gln Leu Lys Leu Asp Gly Leu Leu Ile Ile Gly Gly
 165 170 175
 Asn Asn Ser Asn Thr Asp Thr Ala Met Leu Ala Glu Tyr Phe Leu Ala
 180 185 190
 His Asn Cys Lys Thr Ser Val Ile Gly Val Pro Lys Thr Ile Asp Gly
 195 200 205
 Asp Leu Lys Asn Cys Trp Ile Glu Thr Ser Leu Gly Phe His Thr Ser
 210 215 220
 Cys Arg Thr Tyr Ser Glu Met Ile Gly Asn Leu Ala Lys Asp Ala Leu
 225 230 235 240
 Ser Ala Lys Lys Tyr His His Phe Ile Arg Leu Met Gly Gln Gln Ala
 245 250 255
 Ser Tyr Thr Thr Leu Glu Cys Gly Leu Gln Thr Leu Pro Asn Ile Ala
 260 265 270
 Leu Ile Ser Glu Leu Ile Ala Thr Arg Lys Ile Ser Leu Lys Gln Leu
 275 280 285
 Ser Glu Gln Leu Ala Leu Gly Leu Val Arg Arg Tyr Lys Ser Gly Lys
 290 295 300

Asn Tyr Ser Thr Val Leu Ile Pro Glu Gly Leu Ile Glu His Ile Phe
 305 310 315 320
 Asp Thr Arg Lys Leu Ile Asp Glu Leu Asn Val Leu Leu Ala Asn Gly
 325 330 335
 Asp Ser Ser Met Lys Asn Ser Phe Gln Ala Leu Ser Arg Asp Ile Lys
 340 345 350
 Thr Phe His Leu Phe Pro Lys Asp Ile Ala Asn Gln Leu Leu Ala
 355 360 365
 Arg Asp Ser His Gly Asn Val Arg Val Ser Lys Ile Ala Thr Glu Glu
 370 375 380
 Leu Leu Ala Val Met Val Lys Lys Glu Ile Glu Lys Ile Lys Pro His
 385 390 395 400
 Met Glu Phe His Ser Val Ser His Phe Phe Gly Tyr Glu Ala Arg Ala
 405 410 415
 Gly Phe Pro Ser Asn Phe Asp Cys Asn Tyr Gly Ile Ala Leu Gly Ile
 420 425 430
 Ile Ser Ala Leu Phe Leu Val Arg Gln Lys Thr Gly Tyr Met Ile Thr
 435 440 445
 Ile Asn Asn Leu Ala Gln Ser Tyr Thr Glu Trp Gln Gly Gly Ala Thr
 450 455 460
 Pro Leu Tyr Lys Met Met His Leu Glu Asn Arg Cys Gly Thr Glu Thr
 465 470 475 480
 Pro Val Ile Lys Thr Asp Ser Val Asp Pro Lys Ser Pro Ala Val Gln
 485 490 495
 His Leu Leu Gln Ser Asp Ser Cys Leu Val Glu Asp Leu Tyr Arg
 500 505 510
 Phe Pro Gly Pro Leu Gln Tyr Phe Gly Lys Glu Glu Leu Ile Asp Gln
 515 520 525
 Arg Pro Leu Thr Leu Leu Trp Glu Asn Gln Thr His Ser Pro Leu Leu
 530 535 540
 <210>181
 <211>275
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>181
 Leu Ile Thr Gly Val Val Leu Glu Lys His Glu Gln Arg Thr Met Phe
 1 5 10 15
 Ser Leu Thr Leu Leu Asn Asn Phe Thr Thr Phe Gly Leu Leu His Thr
 20 25 30
 Pro Leu His Tyr Asn Pro Pro Tyr Pro Ile Val Ile Leu Leu His Gly
 35 40 45
 Leu Ala Ser Asp Lys Thr Gly Ser Lys Arg Ser His Val Arg Leu Ala
 50 55 60
 Gln Glu Leu Thr Arg Leu Gly Ile Ala Ala Leu Arg Val Asp Leu Leu
 65 70 75 80
 Gly His Gly Asp Cys Glu Gly Glu Leu Met Asp Phe Ser Leu Glu Asn
 85 90 95
 Tyr Lys Gln Asn Ile Arg Glu Ile Ile Glu Tyr Thr His Ser Leu Leu
 100 105 110
 His Ile Asp Gln Glu Arg Leu Ala Ile Phe Gly Ser Ser Leu Gly Gly
 115 120 125
 Thr Leu Ala Leu Gln Thr Leu Pro Phe Phe Asn Lys Ile Lys Ala Leu
 130 135 140
 Ala Val Trp Ala Pro Thr Ile Ser Gly Glu Leu Met Ala Ala Glu Ala
 145 150 155 160
 Gln Lys Asn Ala Pro Glu Val Ile Thr Met Ser Gln Lys Gly Ala Ile
 165 170 175
 Thr Tyr Ala Gly Met Thr Leu Asn Pro Asp Phe Tyr Thr Gln Phe Leu
 180 185 190
 Lys Ile Asp Ile Val Lys Glu Leu Met Pro Ser Ala Arg Asn Leu Pro
 195 200 205
 Pro Ile Leu Tyr Met Gln Gly Glu Gln Asp Leu Leu Val Ser Ile Asn
 210 215 220
 His Arg Thr Leu Phe Thr Glu Ala Phe Ala Asn Gln Asp Lys Pro Ile

PCT/LB98/01890

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<210>183
<211>188
<212>PRT
<213>Chlamydia pneumoniae
<400>183
Phe Glu Lys Ala Ile Val Tyr Cys Ile Lys Cys Lys Gln Ile Ile Lys
  1          5          10          15
Cys Ile Ser Ile Ile His Thr Pro Thr Pro Ala Thr Pro Leu Cys Thr
      20          25          30
Glu Gly Glu Ile Phe Pro Gly Leu Val Asp Ser Ala Ile Gln Asn Asp
      35          40          45
Leu Glu Arg Leu Leu Thr Val Lys Lys Arg Pro Asp Ile Ile Arg Glu
      50          55          60
Tyr Leu Arg Ala Gly Gly Ser Leu Val Thr Thr Tyr Pro Lys Glu Gly
      65          70          75          80
Gln Arg Leu Arg Ser Pro Glu Gln Leu Arg Val Leu Asp Asp Leu Val
      85          90          95
Gln Ser Tyr Pro Asn His Leu His Ala Ile Glu Leu Asp Cys Gly Ala
      100          105          110
Ile Pro Gln Asp Leu Ile Gly Ala Thr Tyr Ile Ile Thr Phe Ala Asp

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WO 99/27105

PCT/IB98/01890

115 120 125
 Phe Ser Thr Tyr Ile Leu Ser Leu Arg Ser Tyr Gln Ala Asn Ser Pro
 130 135 140
 Ser Asp Asp Thr Trp Gly Ile Trp Phe Gly Ser Ile Asp Asp Pro Val
 145 150 155 160
 Gln Ala Val Ile Ser Phe Leu Lys Asp His Gly Phe Ala Leu Pro Ser
 165 170 175
 Thr Leu Ala Gln Asp Pro Leu Leu Cys Thr Asn Lys
 180 185

<210>184

<211>185

<212>PRT

<213>Chlamydia pneumoniae

<400>184

Leu Cys Phe Lys Cys Ile Tyr Ile Lys Ile Ile Phe Ser Phe Leu Lys
 1 5 10 15
 Gln Leu Met Thr Arg Ser Thr Ile Glu Ser Ser Asp Ser Leu Cys Ser
 20 25 30
 Arg Ser Phe Ser Gln Lys Leu Ser Val Gln Thr Leu Lys Asn Leu Cys
 35 40 45
 Glu Ser Arg Leu Met Lys Ile Thr Ser Leu Val Ile Ala Phe Leu Thr
 50 55 60
 Leu Ile Val Gly Gly Ala Leu Ile Ala Leu Ala Gly Gly Gly Val Leu
 65 70 75 80
 Ser Phe Pro Leu Gly Leu Ile Leu Gly Ser Val Leu Val Leu Phe Ser
 85 90 95
 Ser Ile Tyr Leu Val Ser Cys Cys Lys Phe Phe Thr Leu Lys Glu Met
 100 105 110
 Thr Met Thr Cys Ser Val Lys Ser Lys Ile Asn Ile Trp Phe Glu Lys
 115 120 125
 Gln Arg Asn Lys Asp Ile Glu Lys Ala Leu Glu Asn Pro Asp Leu Xaa
 130 135 140
 Gly Glu Asn Lys Arg Asn Val Gly Asn Arg Ser Ala Arg Asn Gln Leu
 145 150 155 160
 Glu Met Ile Leu His Glu Thr Asp Gly Ile Ile Leu Lys Arg Tyr Met
 165 170 175
 Lys Gly Ala Lys Met Tyr Phe Tyr Leu
 180 185

<210>185

<211>200

<212>PRT

<213>Chlamydia pneumoniae

<400>185

Asn Val Leu Leu Phe Met Asn Trp Val Pro Lys Thr Ile Asp His Val
 1 5 10 15
 Asp Pro Glu Ser Glu Ile Asp Ile Arg Lys Val Val Ser Cys Tyr Lys
 20 25 30
 Leu Ile Lys Glu Cys Gln Pro Glu Phe Arg Ser Leu Ile Ser Glu Leu
 35 40 45
 Leu Gly Val Ile Arg Cys Gly Leu Arg Leu Leu Lys Arg Ser Lys Tyr
 50 55 60
 Gln Glu Gln Ala Arg Thr Val Ser Asp Glu Asp Ala Pro Leu Phe Cys
 65 70 75 80
 Leu Thr Arg Ser Tyr Tyr Gln Asp Gly Tyr Leu Thr Pro Leu Arg Ala
 85 90 95
 Gly Pro Arg Asp Leu Ile Asn His Tyr Ile His Leu Arg Arg Glu
 100 105 110
 Asn Pro Lys His Phe Phe Ser Pro Lys His Pro Cys Tyr Tyr Ala Arg
 115 120 125
 Leu Ala Phe Asn Glu Ser Val Cys Val Tyr Arg Glu Leu Phe Asp Ile
 130 135 140
 Glu Arg Leu Thr Lys Met Tyr Val Glu Gly Asp Tyr Ser Lys Glu Gln
 145 150 155 160
 Glu Lys Asn Leu Gln Ala Ile Leu Ser Phe Val Lys Thr Leu Asp Glu

165 170 175
 Gly Lys Asp Phe Leu Ile Glu His Lys Asp Thr Asp Leu Ile Gly Arg
 180 185 190
 Gly Phe Thr Asp Val Phe Cys Thr
 195 200
 <210>186
 <211>111
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>186
 Asn Leu Trp Ser His Phe Pro Arg Gly Phe Phe Met Leu Pro Phe Cys
 1 5 10 15
 Pro Thr Ile Leu Ala Lys Pro Phe Leu Asn Ser Glu Asn Tyr Gly
 20 25 30
 Leu Glu Arg Leu Ala Ala Thr Val Asp Ser Tyr Phe Asp Leu Gly Gln
 35 40 45
 Ser Gln Ile Val Phe Leu Ser Lys Gln Asp Gln Gly Ile Thr Val Glu
 50 55 60
 Glu Leu Ser Ala Lys Asp Arg Lys Phe Lys Pro Gly Ser Met Asn Cys
 65 70 75 80
 Thr Leu Tyr Thr Glu Asp Pro Ile Leu Pro Ala His Asn Ser Phe Ser
 85 90 95
 Asn Cys Ser Asp Ile Gln Met Arg Thr Pro Ile Ser Pro Ile His
 100 105 110
 <210>187
 <211>276
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>187
 Ser Phe His Ile Glu Phe Thr Ile Gly Glu Asn Asn Met Lys Asn Val
 1 5 10 15
 Gly Ser Glu Cys Ser Gln Pro Leu Val Met Glu Leu Asn Thr Gln Pro
 20 25 30
 Leu Arg Asn Leu Cys Glu Ser Arg Leu Val Lys Ile Thr Ser Phe Val
 35 40 45
 Ile Ala Leu Leu Ala Leu Val Gly Gly Ile Thr Leu Thr Ala Leu Ala
 50 55 60
 Gly Ala Gly Ile Leu Ser Phe Leu Pro Trp Leu Val Leu Gly Ile Val
 65 70 75 80
 Leu Val Val Leu Cys Ala Leu Phe Leu Leu Phe Ser Tyr Lys Phe Cys
 85 90 95
 Pro Ile Lys Glu Leu Gly Val Val Tyr Asn Thr Asp Ser Gln Ile His
 100 105 110
 Gln Trp Phe Gln Lys Gln Arg Asn Lys Asp Leu Glu Lys Ala Thr Glu
 115 120 125
 Asn Pro Glu Leu Phe Gly Glu Asn Arg Ala Glu Asp Asn Asn Arg Ser
 130 135 140
 Ala Arg Ser Gln Val Lys Glu Thr Leu Arg Asp Cys Asp Gly Asn Val
 145 150 155 160
 Leu Lys Lys Ile Tyr Glu Arg Asn Leu Asp Val Leu Leu Phe Met Asn
 165 170 175
 Trp Val Pro Lys Thr Met Asp Asp Val Asp Pro Val Ser Glu Asp Ser
 180 185 190
 Ile Arg Thr Val Ile Ser Cys Tyr Lys Leu Ile Lys Ala Cys Lys Pro
 195 200 205
 Glu Phe Arg Ser Leu Ile Ser Glu Leu Leu Arg Ala Met Gln Ser Gly
 210 215 220
 Leu Gly Leu Leu Ser Arg Cys Ser Arg Tyr Gln Glu Arg Ala Lys Thr
 225 230 235 240
 Val Ser His Lys Asp Ala Pro Leu Phe Cys Pro Thr His Ser Tyr Tyr
 245 250 255
 Arg Asp Gly Tyr Leu Thr Pro Leu Arg Ala Gly Pro Arg Tyr Ile Ile
 260 265 270
 Asn Arg Ala Ile

275
 <210>188
 <211>358
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>188
 Asn Val Arg Lys Asn His Ile Ile Arg Gly Glu Lys Tyr Asn Thr Cys
 1 5 10 15
 Thr Val Ile Ala Phe Val Leu Ser Met Ser Tyr Asp Thr Leu Phe Lys
 20 25 30
 Asn Leu Glu Lys Glu Asp Ser Val His Lys Ile Cys Asn Glu Ile Phe
 35 40 45
 Ala Leu Val Pro Arg Leu Asn Thr Ile Ala Cys Thr Glu Ala Ile Ile
 50 55 60
 Lys Asn Leu Pro Lys Ala Asp Ile His Val His Leu Pro Gly Thr Ile
 65 70 75 80
 Thr Pro Gln Leu Ala Trp Ile Leu Gly Val Lys Asn Gly Phe Leu Lys
 85 90 95
 Trp Ser Tyr Asn Ser Trp Thr Asn His Arg Leu Leu Ser Pro Lys Asn
 100 105 110
 Pro His Lys Gln Tyr Ser Asn Ile Phe Arg Asn Phe Gln Asp Ile Cys
 115 120 125
 His Glu Lys Asp Pro Asp Leu Ser Val Leu Gln Tyr Asn Ile Leu Asn
 130 135 140
 Tyr Asp Phe Asn Ser Phe Asp Arg Val Met Ala Thr Val Gln Gly His
 145 150 155 160
 Arg Phe Pro Pro Gly Gly Ile Gln Asn Glu Glu Asp Leu Leu Leu Ile
 165 170 175
 Phe Asn Asn Tyr Leu Gln Gln Cys Leu Asp Asp Thr Ile Val Tyr Thr
 180 185 190
 Glu Val Gln Gln Asn Ile Arg Leu Ala His Val Leu Tyr Pro Ser Leu
 195 200 205
 Pro Glu Lys His Ala Arg Met Lys Phe Tyr Gln Ile Leu Tyr Arg Ala
 210 215 220
 Ser Gln Thr Phe Ser Lys His Gly Ile Thr Leu Arg Phe Leu Asn Cys
 225 230 235 240
 Phe Asn Lys Thr Phe Ala Pro Gln Ile Asn Thr Gln Glu Pro Ala Gln
 245 250 255
 Glu Ala Val Gln Trp Leu Gln Glu Val Asp Ser Thr Phe Pro Gly Leu
 260 265 270
 Phe Val Gly Ile Gln Ser Ala Gly Ser Glu Ser Ala Pro Gly Ala Cys
 275 280 285
 Pro Lys Arg Leu Ala Ser Gly Tyr Arg Asn Ala Tyr Asp Ser Gly Phe
 290 295 300
 Gly Cys Ala Ala His Ala Gly Glu Gly Ile Glu Thr Arg Thr Ile Phe
 305 310 315 320
 Ser Ser Ala Lys Val Asn Pro Glu Gly Leu Ile Glu Ile Thr Arg Val
 325 330 335
 Thr Phe Ser Ser Leu Lys Arg Lys Gln Pro Ser Ser Leu Pro Ile Arg
 340 345 350
 Val Thr Cys Gln Leu Gly
 355

<210>189
 <211>429
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>189
 Leu Gln Ser Ala Arg Arg His Leu Asn Thr Ile Phe Ile Leu Asp Phe
 1 5 10 15
 Gly Ser Gln Tyr Thr Tyr Val Leu Ala Lys Gln Val Arg Lys Leu Phe
 20 25 30
 Val Tyr Cys Glu Val Leu Pro Trp Asn Ile Ser Val Gln Cys Leu Lys
 35 40 45
 Glu Arg Ala Pro Leu Gly Ile Ile Leu Ser Gly Gly Pro His Ser Val

50 55 60
 Tyr Glu Asn Lys Ala Pro His Leu Asp Pro Glu Ile Tyr Lys Leu Gly
 65 70 75 80
 Ile Pro Ile Leu Ala Ile Cys Tyr Gly Met Gln Leu Met Ala Arg Asp
 85 90 95
 Phe Gly Gly Thr Val Ser Pro Gly Val Gly Glu Phe Gly Tyr Thr Pro
 100 105 110
 Ile His Leu Tyr Pro Cys Glu Leu Phe Lys His Ile Val Asp Cys Glu
 115 120 125
 Ser Leu Asp Thr Glu Ile Arg Met Ser His Arg Asp His Val Thr Thr
 130 135 140
 Ile Pro Glu Gly Phe Asn Val Ile Ala Ser Thr Ser Gln Cys Ser Ile
 145 150 155 160
 Ser Gly Ile Glu Asn Thr Lys Gln Arg Leu Tyr Gly Leu Gln Phe His
 165 170 175
 Pro Glu Val Ser Asp Ser Thr Pro Thr Gly Asn Lys Ile Leu Glu Thr
 180 185 190
 Phe Val Gln Glu Ile Cys Ser Ala Pro Thr Leu Trp Asn Pro Leu Tyr
 195 200 205
 Ile Gln Gln Asp Leu Val Ser Lys Ile Gln Asp Thr Val Ile Glu Val
 210 215 220
 Phe Asp Glu Val Ala Gln Ser Leu Asp Val Gln Trp Leu Ala Gln Gly
 225 230 235 240
 Thr Ile Tyr Ser Asp Val Ile Glu Ser Ser Arg Ser Gly His Ala Ser
 245 250 255
 Glu Val Ile Lys Ser His His Asn Val Gly Gly Leu Pro Lys Asn Leu
 260 265 270
 Lys Leu Lys Leu Val Glu Pro Leu Arg Tyr Leu Phe Lys Asp Glu Val
 275 280 285
 Arg Ile Leu Gly Glu Ala Leu Gly Leu Ser Ser Tyr Leu Leu Asp Arg
 290 295 300
 His Pro Phe Pro Gly Pro Gly Leu Thr Ile Arg Val Ile Gly Glu Ile
 305 310 315 320
 Leu Pro Glu Tyr Leu Ala Ile Leu Arg Arg Ala Asp Leu Ile Phe Ile
 325 330 335
 Glu Glu Leu Arg Lys Ala Lys Leu Tyr Asp Lys Ile Ser Gln Ala Phe
 340 345 350
 Ala Leu Phe Leu Pro Ile Lys Ser Val Ser Val Lys Gly Asp Cys Arg
 355 360 365
 Ser Tyr Gly Tyr Thr Ile Ala Leu Arg Ala Val Glu Ser Thr Asp Phe
 370 375 380
 Met Thr Gly Arg Trp Ala Tyr Leu Pro Cys Asp Val Leu Ser Ser Cys
 385 390 395 400
 Ser Ser Arg Ile Ile Asn Glu Ile Pro Glu Val Ser Arg Val Val Tyr
 405 410 415
 Asp Ile Ser Asp Lys Pro Pro Ala Thr Ile Glu Trp Glu
 420 425

<210>190

<211>266

<212>PRT

<213>Chlamydia pneumoniae

<400>190

Ala Pro Ile Gly Ala Ala Ile Gly Ile Gly Pro Leu Gly Ile Ser Arg
 1 5 10 15
 Ala His His Leu Val Glu Ala Gly Ala Asn Val Leu Val Ile Asp Thr
 20 25 30
 Ala His Ala His Ser Lys Gly Val Phe Gln Thr Val Leu Glu Ile Lys
 35 40 45
 Ser Gln Phe Pro Gln Ile Ser Leu Val Val Gly Asn Leu Val Thr Ala
 50 55 60
 Glu Ala Ala Val Ser Leu Ala Glu Ile Gly Val Asp Ala Val Lys Val
 65 70 75 80
 Gly Ile Gly Pro Gly Ser Ile Cys Thr Thr Arg Ile Val Ser Gly Val
 85 90 95

Gly Tyr Pro Gln Ile Thr Ala Ile Thr Asn Val Ala Lys Ala Leu Lys
 100 105 110
 Asn Ser Ala Val Thr Val Ile Ala Asp Gly Arg Ile Arg Tyr Ser Gly
 115 120 125
 Asp Val Val Lys Ala Leu Ala Ala Gly Ala Asp Cys Val Met Leu Gly
 130 135 140
 Ser Leu Leu Ala Gly Thr Asp Glu Ala Pro Gly Asp Ile Val Ser Ile
 145 150 155 160
 Asp Glu Lys Leu Phe Lys Arg Tyr Arg Gly Met Gly Ser Leu Gly Ala
 165 170 175
 Met Lys Gln Gly Ser Ala Asp Arg Tyr Phe Gln Thr Gln Gly Gln Lys
 180 185 190
 Lys Leu Val Pro Gly Gly Val Glu Gly Leu Val Ala Tyr Lys Gly Ser
 195 200 205
 Val His Asp Val Leu Tyr Gln Ile Leu Gly Gly Ile Arg Ser Gly Met
 210 215 220
 Gly Tyr Val Gly Ala Glu Thr Leu Lys Asp Leu Lys Thr Lys Ala Ser
 225 230 235 240
 Phe Val Arg Ile Thr Glu Ser Gly Arg Ala Glu Ser His Ile His Asn
 245 250 255
 Ile Tyr Lys Val Gln Pro Thr Leu Asn Tyr
 260 265

<210>191

<211>170

<212>PRT

<213>Chlamydia pneumoniae

<400>191

Lys Ile Phe Ile Trp Phe Val Glu Lys Ile Val Ile Leu Ser Met Ile
 1 5 10 15
 Met Thr Thr Ile Ser Asn Ser Pro Ser Pro Ala Leu Asn Pro Glu Leu
 20 25 30
 Ser Leu Ile Pro Pro Pro Thr Leu Val Ser Ser Gly Thr Gln Thr Ser
 35 40 45
 Leu Ala Tyr Thr Ile Pro Ala Gln Gly Arg Arg Ser Thr Leu Arg Ile
 50 55 60
 Ile Leu Asp Ile Phe Ile Ile Ile Leu Gly Leu Ala Thr Ile Ile Ser
 65 70 75 80
 Thr Phe Ile Val Ile Phe Phe Leu Asn Gly Leu Asn Leu Leu Ser Thr
 85 90 95
 Pro Ser Ile Ile Ser Ser Ser Cys Leu Ile Ile Val Gly Leu Leu Phe
 100 105 110
 Leu Ile Met Gly Leu Tyr Phe Met Ile Ser Ser Leu Asp Gln Gly Leu
 115 120 125
 Val Gly Leu Leu Gln Lys Glu Leu Ser Gln Ala Glu Glu Arg Glu Glu
 130 135 140
 Glu Tyr Ile Gln Glu Ile Glu Ala Leu Arg Gly Ala Pro Arg Ala Glu
 145 150 155 160
 Ser Pro Thr Glu Ser Pro Ser Thr Trp Leu
 165 170

<210>192

<211>140

<212>PRT

<213>Chlamydia pneumoniae

<400>192

Leu Leu Leu Ala Cys Phe Gln Phe Leu Leu Arg Arg Arg Asp Met Glu
 1 5 10 15
 Gln Pro Asn Cys Val Ile Gln Asp Thr Thr Thr Val Leu Tyr Ala Leu
 20 25 30
 Asn Ser Phe Asp Pro Arg Leu Ser Asp Asp Thr His Arg Leu Gly Lys
 35 40 45
 Gln Ser Pro Leu Glu Ala Glu Asn Ala Leu Gly Glu Phe Ile Glu Gly
 50 55 60
 Leu Asp Thr Asn Ser Phe Pro Leu Glu Glu Val Ala Ile Pro Ile Leu
 65 70 75 80

PCT/DV98/01890

466

WO 99/27105

PCT/IB98/01890

405 410 415
 <210>194
 <211>303
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>194
 Val Gly Gln Lys Arg Ala Asn Xaa Ser Lys Phe Ile Phe Leu Ile Ser
 1 5 10 15
 Glu Glu Ser Met Lys Gln Pro Met Ser Leu Ile Phe Ser Ser Val Cys
 20 25 30
 Leu Gly Leu Gly Leu Gly Ser Leu Ser Ser Cys Asn Gln Lys Pro Ser
 35 40 45
 Trp Asn Tyr His Asn Thr Ser Thr Ser Glu Glu Phe Phe Val His Gly
 50 55 60
 Asn Lys Ser Val Ser Gln Leu Pro His Tyr Pro Ser Ala Phe Arg Thr
 65 70 75 80
 Thr Gln Ile Phe Ser Glu Glu His Asn Asp Pro Tyr Val Val Ala Lys
 85 90 95
 Thr Asp Glu Glu Ser Arg Lys Ile Trp Arg Glu Ile His Lys Asn Leu
 100 105 110
 Lys Ile Lys Gly Ser Tyr Ile Pro Ile Ser Thr Tyr Gly Ser Leu Met
 115 120 125
 His Pro Lys Ser Ala Ala Leu Thr Leu Lys Thr Tyr Arg Pro His Pro
 130 135 140
 Ile Trp Ile Asn Gly Tyr Glu Arg Ser Phe Asn Ile Asp Thr Gly Lys
 145 150 155 160
 Tyr Leu Lys Asn Gly Ser Arg Arg Arg Thr Ser His Asp Gly Pro Lys
 165 170 175
 Asn Arg Ala Val Leu Asn Leu Ile Lys Ser Ser Gly Arg Arg Cys Asn
 180 185 190
 Ala Ile Gly Leu Glu Met Thr Glu Glu Asp Phe Val Ile Ala Arg Arg
 195 200 205
 Arg Glu Gly Val Tyr Ser Leu Tyr Pro Val Glu Val Cys Ser Tyr Pro
 210 215 220
 Gln Gly Asn Pro Phe Val Ile Ala Tyr Ala Trp Ile Ala Asp Glu Ser
 225 230 235 240
 Ala Cys Ser Lys Glu Val Leu Pro Val Lys Gly Tyr Tyr Ser Leu Val
 245 250 255
 Trp Glu Ser Val Ser Ser Ser Asp Ser Leu Asn Ala Phe Gly Asp Ser
 260 265 270
 Phe Ala Glu Asp Tyr Leu Arg Ser Thr Phe Leu Ala Asn Gly Thr Ser
 275 280 285
 Ile Leu Cys Val His Glu Ser Tyr Lys Lys Val Pro Pro Gln Pro
 290 295 300
 <210>195
 <211>88
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>195
 Val Lys Glu Tyr Leu Asp Phe Leu Val Gln Arg Asn Val Glu Arg Asp
 1 5 10 15
 Pro Gln Thr Lys Arg His Cys Thr Val Ser Gln Lys Phe Gly Gly Glu
 20 25 30
 Ser Ile Asp Ala Lys Thr Thr Thr Gly Gln Leu Phe His Ile Ala Gly
 35 40 45
 Lys Thr Glu Pro Gly His Gly Lys Leu Cys Leu Gly Glu Ser Ile Leu
 50 55 60
 Lys Gln Leu Leu Ala Leu Gly Ile Ile Thr Gly Tyr Glu Asn Arg Glu
 65 70 75 80
 Arg Glu Val Trp Val Tyr Leu Asp
 85
 <210>196
 <211>203
 <212>PRT

<213>Chlamydia pneumoniae

<400>196

Thr Ser Leu His Lys Ile Leu Asp Cys Lys Tyr Lys Pro Val Phe Ile
 1 5 10 15
 Gln Asn Thr Val Ala Ser Glu Thr Tyr Pro Ser Gln Ile Leu His Ala
 20 25 30
 Gln Arg Glu Val Arg Asp Ala Tyr Phe Asn Gln Ala Asp Cys His Pro
 35 40 45
 Ala Arg Ala Asn Gln Ile Leu Glu Ala Lys Lys Ile Cys Leu Leu Asp
 50 55 60
 Val Tyr His Thr Asn His Tyr Ser Val Phe Thr Phe Cys Val Asp Asn
 65 70 75 80
 Tyr Pro Asn Leu Arg Phe Thr Phe Val Ser Ser Lys Asn Asn Glu Met
 85 90 95
 Asn Gly Leu Ser Asn Pro Leu Asp Asn Val Leu Val Glu Ala Met Val
 100 105 110
 Arg Arg Thr His Ala Arg Asn Leu Leu Ala Ala Cys Lys Ile Arg Asn
 115 120 125
 Ile Glu Val Pro Arg Val Val Gly Leu Asp Leu Arg Ser Gly Ile Leu
 130 135 140
 Ile Ser Lys Leu Glu Leu Lys Gln Pro Gln Phe Gln Ser Leu Thr Glu
 145 150 155 160
 Asp Phe Val Asn His Ser Thr Asn Gln Glu Glu Ala Arg Val His Gln
 165 170 175
 Lys His Val Leu Leu Ile Ser Leu Ile Leu Leu Cys Lys Gln Ala Ala
 180 185 190
 Leu Glu Ser Phe Gln Glu Lys Lys Arg Ser Ser
 195 200

<210>197

<211>454

<212>PRT

<213>Chlamydia pneumoniae

<400>197

Met Lys Lys Val Leu Ile Ala Asn Arg Gly Glu Ile Ala Val Arg Ile
 1 5 10 15
 Ile Arg Ala Cys His Asp Leu Gly Leu Ser Thr Val Ala Val Tyr Ser
 20 25 30
 Leu Ala Asp Gln Glu Ala Leu His Val Leu Leu Ala Asp Glu Ala Ile
 35 40 45
 Cys Ile Gly Glu Pro Gln Ala Ala Lys Ser Tyr Leu Lys Ile Ser Asn
 50 55 60
 Ile Leu Ala Ala Cys Glu Ile Thr Gly Ala Asp Ala Val His Pro Gly
 65 70 75 80
 Tyr Gly Phe Leu Ser Glu Asn Ala Asn Phe Ala Ser Ile Cys Glu Ser
 85 90 95
 Cys Gly Leu Thr Phe Ile Gly Pro Ser Ser Glu Ser Ile Ala Met Met
 100 105 110
 Gly Asp Lys Ile Ala Ala Lys Ser Leu Ala Lys Lys Ile Lys Cys Pro
 115 120 125
 Val Ile Pro Gly Ser Glu Gly Ile Ile Glu Asp Glu Ser Glu Gly Leu
 130 135 140
 Lys Ile Ala Glu Lys Ile Gly Phe Pro Ile Val Ile Lys Ala Val Ala
 145 150 155 160
 Gly Gly Gly Gly Arg Gly Ile Arg Ile Val Lys Glu Lys Asp Glu Phe
 165 170 175
 Tyr Arg Ala Phe Ser Ala Ala Arg Ala Glu Ala Glu Ala Gly Phe Asn
 180 185 190
 Asn Pro Asn Val Tyr Ile Glu Lys Phe Ile Glu Asn Pro Arg His Leu
 195 200 205
 Glu Ile Gln Val Ile Gly Asp Thr His Gly Asn Tyr Val His Leu Gly
 210 215 220
 Glu Arg Asp Cys Thr Ile Gln Arg Arg Arg Gln Lys Leu Ile Glu Glu
 225 230 235 240
 Thr Pro Ser Pro Ile Leu Asn Ala Glu Ile Arg Val Lys Val Gly Lys

245 250 255
 Val Ala Val Asp Leu Ala Arg Ser Ala Gly Tyr Phe Ser Val Gly Thr
 260 265 270
 Val Glu Phe Leu Leu Asp Lys Asp Lys Lys Phe Tyr Phe Met Glu Met
 275 280 285
 Asn Thr Arg Ile Gln Val Glu His Thr Ile Thr Glu Glu Val Thr Gly
 290 295 300
 Ile Asp Leu Val Lys Glu Gln Ile His Val Ala Met Gly Asn Lys Leu
 305 310 315 320
 Pro Trp Lys Gln Lys Asn Ile Glu Phe Ser Gly His Ile Ile Gln Cys
 325 330 335
 Arg Ile Asn Ala Glu Asp Pro Thr Asn Asn Phe Ser Pro Ser Pro Gly
 340 345 350
 Arg Leu Asp Tyr Tyr Leu Pro Pro Ala Gly Pro Ser Ile Arg Val Asp
 355 360 365
 Gly Ala Cys Tyr Ser Gly Tyr Ala Ile Pro Pro Tyr Asp Ser Met
 370 375 380
 Ile Ala Lys Val Ile Ala Lys Gly Lys Asn Arg Glu Glu Ala Ile Ala
 385 390 395 400
 Ile Met Lys Arg Ala Leu Lys Glu Phe His Ile Gly Gly Val Gln Ser
 405 410 415
 Thr Ile Pro Phe His Gln Phe Met Leu Asp Asn Pro Lys Phe Leu Glu
 420 425 430
 Ser Asn Tyr Asp Ile Asn Tyr Ile Asp Asn Leu Leu Ala Gln Gly Asn
 435 440 445
 Ser Phe Phe Lys Glu Phe
 450

<210>198

<211>167

<212>PRT

<213>Chlamydia pneumoniae

<400>198

Met Asp Leu Lys Gln Ile Glu Lys Leu Met Ile Ala Met Gly Arg Asn
 1 5 10 15
 Gly Met Lys Arg Phe Ala Ile Lys Arg Glu Gly Leu Glu Leu Glu Leu
 20 25 30
 Glu Arg Asp Thr Arg Glu Gly Asn Arg Gln Glu Pro Val Phe Tyr Asp
 35 40 45
 Ser Arg Leu Phe Ser Gly Phe Ser Gln Glu Arg Pro Ile Pro Thr Asp
 50 55 60
 Pro Lys Lys Asp Thr Ile Lys Glu Thr Thr Thr Glu Asn Ser Glu Thr
 65 70 75 80
 Ser Thr Thr Thr Ser Ser Gly Asp Phe Ile Ser Ser Pro Leu Val Gly
 85 90 95
 Thr Phe Tyr Gly Ser Pro Ala Pro Asp Ser Pro Ser Phe Val Lys Pro
 100 105 110
 Gly Asp Ile Val Ser Glu Asp Thr Ile Val Cys Ile Val Glu Ala Met
 115 120 125
 Lys Val Met Asn Glu Val Lys Ala Gly Met Ser Gly Arg Val Leu Glu
 130 135 140
 Val Leu Ile Thr Asn Gly Asp Pro Val Gln Phe Gly Ser Lys Leu Phe
 145 150 155 160
 Arg Ile Ala Lys Asp Ala Ser
 165

<210>199

<211>185

<212>PRT

<213>Chlamydia pneumoniae

<400>199

Met Val Leu Ser Ser Gln Leu Ser Val Gly Met Phe Ile Ser Thr Lys
 1 5 10 15
 Asp Gly Leu Tyr Lys Val Thr Ser Val Ser Lys Val Ala Gly Pro Lys
 20 25 30
 Gly Glu Ser Phe Ile Lys Val Ala Leu Gln Ala Ala Asp Ser Asp Val

35 40 45
 Val Ile Glu Arg Asn Phe Lys Ala Thr Gln Glu Val Lys Glu Ala Gln
 50 55 60
 Phe Glu Thr Arg Thr Leu Glu Tyr Leu Tyr Leu Glu Asp Glu Ser Tyr
 65 70 75 80
 Leu Phe Leu Asp Leu Gly Asn Tyr Glu Lys Leu Phe Ile Pro Gln Glu
 85 90 95
 Ile Met Lys Asp Asn Phe Leu Phe Leu Lys Ala Gly Val Thr Val Ser
 100 105 110
 Ala Met Val Tyr Asp Asn Val Val Phe Ser Val Glu Leu Pro His Phe
 115 120 125
 Leu Glu Leu Met Val Ser Lys Thr Asp Phe Pro Gly Asp Ser Leu Ser
 130 135 140
 Leu Ser Gly Gly Val Lys Lys Ala Leu Leu Glu Thr Gly Ile Glu Val
 145 150 155 160
 Met Val Pro Pro Phe Val Glu Ile Gly Asp Val Ile Lys Ile Asp Thr
 165 170 175
 Arg Thr Cys Glu Tyr Ile Gln Arg Val
 180 185

<210>200

<211>229

<212>PRT

<213>Chlamydia pneumoniae

<400>200

Val Lys Lys Gln Glu Ser Val Leu Val Gly Pro Ser Ile Met Gly Ala
 1 5 10 15
 Asp Leu Thr Cys Leu Gly Val Glu Ala Lys Lys Leu Glu Gln Ala Gly
 20 25 30
 Ser Asp Phe Ile His Ile Asp Ile Met Asp Gly His Phe Val Pro Asn
 35 40 45
 Leu Thr Phe Gly Pro Gly Ile Ile Ala Ala Ile Asn Arg Ser Thr Asp
 50 55 60
 Leu Phe Leu Glu Val His Ala Met Ile Tyr Asn Pro Phe Glu Phe Ile
 65 70 75 80
 Glu Ser Phe Val Arg Ser Gly Ala Asp Arg Ile Ile Val His Phe Glu
 85 90 95
 Ala Ser Glu Asp Ile Lys Glu Leu Leu Ser Tyr Ile Lys Lys Cys Gly
 100 105 110
 Val Gln Ala Gly Leu Ala Phe Ser Pro Asp Thr Ser Ile Glu Phe Leu
 115 120 125
 Pro Ser Phe Leu Pro Phe Cys Asp Val Val Val Leu Met Ser Val Tyr
 130 135 140
 Pro Gly Phe Thr Gly Gln Ser Phe Leu Pro Asn Thr Ile Glu Lys Ile
 145 150 155 160
 Ala Phe Ala Arg His Ala Ile Lys Thr Leu Gly Leu Lys Asp Ser Cys
 165 170 175
 Leu Ile Glu Val Asp Gly Gly Ile Asp Gln Gln Ser Ala Pro Leu Cys
 180 185 190
 Arg Asp Ala Gly Ala Asp Ile Leu Val Thr Ala Ser Tyr Leu Phe Glu
 195 200 205
 Ala Asp Ser Leu Ala Met Glu Asp Lys Ile Leu Leu Arg Gly Glu
 210 215 220
 Asn Tyr Gly Val Lys
 225

<210>201

<211>397

<212>PRT

<213>Chlamydia pneumoniae

<400>201

Pro Ile Lys Asp Lys Ile Leu Met Ser Ser Pro Val Asn Asn Thr Pro
 1 5 10 15
 Ser Ala Pro Asn Ile Pro Ile Pro Ala Pro Thr Thr Pro Gly Ile Pro
 20 25 30
 Thr Thr Lys Pro Arg Ser Ser Phe Ile Glu Lys Val Ile Ile Val Ala

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35 40 45
 Lys Tyr Ile Leu Phe Ala Ile Ala Ala Thr Ser Gly Ala Leu Gly Thr
 50 55 60
 Ile Leu Gly Leu Ser Gly Ala Leu Thr Pro Gly Ile Gly Ile Ala Leu
 65 70 75 80
 Leu Val Ile Phe Phe Val Ser Met Val Leu Leu Gly Leu Ile Leu Lys
 85 90 95
 Asp Ser Ile Ser Gly Gly Glu Glu Arg Arg Leu Arg Glu Glu Val Ser
 100 105 110
 Arg Phe Thr Ser Glu Asn Gln Arg Leu Thr Val Ile Thr Thr Thr Leu
 115 120 125
 Glu Thr Glu Val Lys Asp Leu Lys Ala Ala Lys Asp Gln Leu Thr Leu
 130 135 140
 Glu Ile Glu Ala Phe Arg Asn Glu Asn Gly Asn Leu Lys Thr Thr Ala
 145 150 155 160
 Glu Asp Leu Glu Glu Gln Val Ser Lys Leu Ser Glu Gln Leu Glu Ala
 165 170 175
 Leu Glu Arg Ile Asn Gln Leu Ile Gln Ala Asn Ala Gly Asp Ala Gln
 180 185 190
 Glu Ile Ser Ser Glu Leu Lys Lys Leu Ile Ser Gly Trp Asp Ser Lys
 195 200 205
 Val Val Glu Gln Ile Asn Thr Ser Ile Gln Ala Leu Lys Val Leu Leu
 210 215 220
 Gly Gln Glu Trp Val Gln Glu Ala Gln Thr His Val Lys Ala Met Gln
 225 230 235 240
 Glu Gln Ile Gln Ala Leu Gln Ala Glu Ile Leu Gly Met His Asn Gln
 245 250 255
 Ser Thr Ala Leu Gln Lys Ser Val Glu Asn Leu Leu Val Gln Asp Gln
 260 265 270
 Ala Leu Thr Arg Val Val Gly Glu Leu Leu Glu Ser Glu Asn Lys Leu
 275 280 285
 Ser Gln Ala Cys Ser Ala Leu Arg Gln Glu Ile Glu Lys Leu Ala Gln
 290 295 300
 His Glu Thr Ser Leu Gln Gln Arg Ile Asp Ala Met Leu Ala Gln Glu
 305 310 315 320
 Gln Asn Leu Ala Glu Gln Val Thr Ala Leu Glu Lys Met Lys Gln Glu
 325 330 335
 Ala Gln Lys Ala Glu Ser Glu Phe Ile Ala Cys Val Arg Asp Arg Thr
 340 345 350
 Phe Gly Arg Arg Glu Thr Pro Pro Thr Thr Pro Val Val Glu Gly
 355 360 365
 Asp Glu Ser Gln Glu Glu Asp Glu Gly Gly Thr Pro Pro Val Ser Gln
 370 375 380
 Pro Ser Ser Pro Val Asp Arg Ala Thr Gly Asp Gly Gln
 385 390 395
 <210>202
 <211>118
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>202
 Phe Ser Leu Val Asn Arg Glu Thr Ser Ser Leu Ser Leu Arg Ser Ser
 1 5 10 15
 Pro Pro Leu Ile Glu Ser Leu Arg Ile Lys Pro Lys Ser Thr Ile Glu
 20 25 30
 Thr Lys Lys Ile Thr Arg Arg Ala Ile Pro Ile Pro Gly Val Ser Ala
 35 40 45
 Pro Asp Arg Pro Arg Ile Val Pro Ser Ala Pro Asp Val Ala Ala Ile
 50 55 60
 Ala Asn Ser Met Tyr Leu Ala Thr Met Ile Thr Phe Ser Met Lys Leu
 65 70 75 80
 Glu Arg Gly Phe Val Val Gly Ile Pro Gly Val Val Gly Ala Gly Ile
 85 90 95
 Gly Met Phe Gly Ala Glu Gly Val Leu Phe Thr Gly Asp Asp Ile Arg
 100 105 110

Ile Leu Ser Leu Ile Gly

115

<210>203

<211>217

<212>PRT

<213>Chlamydia pneumoniae

<400>203

Met His Ser Lys Phe Leu Ser Arg Arg Lys Lys Asn Ser Ser His Lys

1

5

10

15

Glu Glu Thr Ser Trp Asp Cys Ile Ala Ser Ser Tyr Asn Lys Ile Val

20

25

30

Gln Asp Lys Gly His Tyr Tyr His Arg Glu Thr Ile Leu Pro Gln Leu

35

40

45

Leu Pro Ser Leu Thr Leu Gly Ser Lys Ser Ser Val Leu Asp Ile Gly

50

55

60

Cys Gly Gln Gly Phe Leu Glu Arg Ala Leu Pro Lys Glu Cys Arg Tyr

65

70

75

80

Leu Gly Ile Asp Ile Ser Ser Arg Leu Ile Ala Leu Ala Lys Lys Met

85

90

95

Arg Ser Val Asn Ser His Gln Phe Lys Val Ala Asp Leu Ser Lys Arg

100

105

110

Leu Glu Phe Val Glu Pro Thr Leu Phe Ser His Ala Val Ala Ile Leu

115

120

125

Ser Leu Gln Asn Met Glu Phe Pro Gly Glu Ala Ile Arg Asn Thr Ala

130

135

140

Thr Leu Leu Glu Pro Leu Gly Gln Phe Phe Ile Val Leu Asn His Pro

145

150

155

160

Cys Phe Arg Ile Pro Arg Ala Ser Ser Trp His Tyr Asp Glu Asn Lys

165

170

175

Lys Ser Tyr Leu Ser Ser Tyr Arg Ser Leu Ser Leu Pro Asn Glu Asn

180

185

190

Pro Asn His Gly Ser Pro Arg Thr Lys Arg Phe Ala Phe Tyr Pro Leu

195

200

205

Leu Ser Leu Ser Ser Lys Leu Leu Val

210

215

<210>204

<211>437

<212>PRT

<213>Chlamydia pneumoniae

<400>204

Lys Thr Xaa Asn Ser Cys Ile Met Phe Arg Lys Leu Phe Pro Phe Ser

1

5

10

15

Lys Lys Lys Thr Gly Gln Lys Gln Arg Leu Arg Asn Asn Gly Leu Leu

20

25

30

Gln Ala Ile Ile Gln Ser Ile Lys Val Leu Leu His Asn Glu Ala Ser

35

40

45

Lys Glu Ala Cys Val Leu Ser Tyr Tyr Gly Leu Leu Thr Cys Val Pro

50

55

60

Ile Leu Val Phe Phe Leu Arg Leu Ser Gln His Leu Phe Thr Asn Leu

65

70

75

80

Asn Trp Lys Glu Trp Leu Ile Ile Lys Phe Pro Asp Tyr Lys Lys Pro

85

90

95

Ile Val Ala Ile Val Glu Ala Ala Tyr His Ala Thr Glu Ser Asn Ile

100

105

110

Gly Leu Val Leu Val Gly Ser Phe Phe Val Phe Cys Trp Ala Gly Ile

115

120

125

Leu Met Leu Leu Ser Leu Glu Asp Gly Leu Asn Lys Ile Phe Arg Thr

130

135

140

Ser Trp Thr Pro Ile Ser Leu Lys Arg Leu Val Ser Tyr Phe Val Ile

145

150

155

160

Thr Leu Val Ser Pro Met Ile Phe Ile Ile Val Cys Gly Ser Trp Ile

165

170

175

Tyr Ile Thr Gln Ile Met Pro Ile Gln Tyr Ala Lys Leu Phe Ser Leu

180

185

190

Ser His Ser Met Thr Ala Leu Tyr Phe Ile Ser Arg Phe Val Pro Tyr
 195 200 205
 Leu Leu Leu Tyr Leu Ala Leu Phe Cys Cys Tyr Ala Phe Leu Pro Arg
 210 215 220
 Val Ala Ile Gln Lys Thr Ser Ala Leu Ile Ser Thr Leu Ile Ile Gly
 225 230 235 240
 Ser Val Trp Ile Val Phe Gln Lys Ala Phe Phe Ser Leu Gln Val Ser
 245 250 255
 Ile Phe Asn Tyr Ser Phe Thr Tyr Gly Ala Leu Val Ala Leu Pro Ser
 260 265 270
 Phe Leu Leu Leu Leu Tyr Ile Tyr Thr Met Ile Tyr Leu Phe Gly Gly
 275 280 285
 Ala Leu Thr Phe Ile Ile Gln Asn Arg Gly Cys Thr Phe Ile Phe Leu
 290 295 300
 Gly Asp Lys Ile Leu Pro Ser Cys Tyr Leu Gln Leu Ile Thr Ser Thr
 305 310 315 320
 Tyr Ile Leu Ala Leu Thr Thr Arg Gln Phe Asn Glu Gly Leu Ser Pro
 325 330 335
 Leu Thr Ala Gln Phe Ile Ala Lys Gln Ser Lys Val Pro Ile Gly Glu
 340 345 350
 Val Ser Gln Cys Leu Asp Val Leu Glu Lys Glu Gly Phe Leu Phe Pro
 355 360 365
 Tyr Asn Asn Gly Tyr Gln Pro Val Phe Asn Phe Ser Glu Leu Thr Ile
 370 375 380
 Lys Asp Ile Ala Asp Lys Leu Leu His Arg Glu Ile Phe Lys Lys Phe
 385 390 395 400
 Asn Pro Asp Leu Gly Ile Thr Phe Ile Glu Asn Ser Phe Gln Asn Ile
 405 410 415
 Phe Asn Gln Ala Ser Lys Asn Lys Glu Asn Leu Thr Leu Ser Glu Ile
 420 425 430
 Ala Arg Arg Ile Lys
 435

<210>205

<211>313

<212>PRT

<213>Chlamydia pneumoniae

<400>205

Ala Asn Gln Met Lys Arg Arg Ser Trp Leu Lys Ile Leu Gly Ile Cys
 1 5 10 15
 Leu Gly Ser Ser Ile Val Leu Gly Phe Leu Ile Phe Leu Pro Gln Leu
 20 25 30
 Leu Ser Thr Glu Ser Gly Lys Tyr Leu Val Phe Ser Leu Ile His Lys
 35 40 45
 Glu Ser Gly Leu Ser Cys Ser Ala Glu Glu Leu Lys Ile Ser Trp Phe
 50 55 60
 Gly Arg Gln Thr Ala Arg Lys Ile Lys Leu Thr Gly Glu Ala Lys Asp
 65 70 75 80
 Glu Val Xaa Ser Ala Glu Lys Phe Glu Leu Asp Gly Ser Leu Leu Arg
 85 90 95
 Leu Leu Ile Tyr Lys Lys Pro Lys Gly Ile Thr Leu Ser Gly Trp Ser
 100 105 110
 Leu Lys Ile Asn Glu Pro Ala Ser Ile Asp His Pro Ser Val Ser His
 115 120 125
 Leu Asp Pro Gly Ser Leu Leu Thr Tyr Leu Asn Asp Cys Lys Ile Ile
 130 135 140
 Ser Glu His Gly Phe Ile Thr Met Lys Thr Val Ser Gly Ser Ser Leu
 145 150 155 160
 Ser Val Ser Gly Xaa Tyr Leu Glu Xaa Ser Ser Glu Lys Phe Met Thr
 165 170 175
 Lys Cys Val Val Ser Glu Asp Gln Gln Ser Gly Asn Ile Phe Ile Glu
 180 185 190
 Ser Val Leu Ser Pro Asp Val Ser Ile Ser Ala Gln Phe Ser Ser Val
 195 200 205
 Pro Val Ala Phe Phe Lys Ile Phe Ile Ala Ser Pro Phe Trp Asp His

210 215 220
 Leu Leu Ser Tyr Glu Asp Ile Ile Asn Leu Ser Ala Glu Ala Thr His
 225 230 235 240
 Thr Asn Asp Gly Lys Ile Ser Met Thr Ala Ser Gly Glu Gly Asn Gln
 245 250 255
 Ile Gln Met Lys Leu Gln Gly His Ile His Lys Ser Thr Phe Tyr Ile
 260 265 270
 Val Glu Gly Ser Ser Ser Phe Ile Glu Leu Lys Pro Glu Leu Ala Ser
 275 280 285
 Ala Leu Cys Asn Gln Ile Ile Pro Leu Ser Thr Pro Ile Thr Ser Lys
 290 295 300
 Gln Ile Xaa Cys Tyr Gly Leu Leu Cys
 305 310

<210>206

<211>275

<212>PRT

<213>Chlamydia pneumoniae

<400>206

Asn Leu Asn Leu Ser Ser Pro Gln Leu Phe Ala Thr Arg Ser Phe Arg
 1 5 10 15
 Cys Pro His Pro Leu Leu Val Ser Lys Ser Xaa Ala Thr Val Ser Tyr
 20 25 30
 Ala Lys Ile Pro Leu Asp Ile Thr Lys Trp Lys His Ile Glu Ile Thr
 35 40 45
 Ser Gln Ala Gln Leu Pro Glu Val Ala Ile His Pro Lys Asp Pro Asn
 50 55 60
 Leu Ala Leu Gln Leu Arg Asp Thr Lys Leu Gly Ile Lys Lys Thr Glu
 65 70 75 80
 Lys Xaa Ser Asp Ile Arg Tyr Ser Ser Ser Thr Val Leu Gly Gly Ala
 85 90 95
 Ser Pro Ser His Leu Asn Gly Leu Ile Ser Ile Asp Asn Lys Lys His
 100 105 110
 Leu Thr Lys Phe Arg Leu Gln Gln Ala Gln Leu Pro His Thr Tyr Leu
 115 120 125
 Arg Ala Ile Phe Pro Gln Pro Phe Val Ile Asn Val Pro Leu Asp Val
 130 135 140
 Ala Tyr Tyr Ser Leu Asn Ile Glu Gly Thr Tyr Lys Asn Ala His Leu
 145 150 155 160
 Glu Ala Asp Ala Ile Leu Asp Asn Pro Leu Leu Lys Leu Ser Cys Ser
 165 170 175
 Met Ser Gly Ala Trp Lys Asn Phe Leu Phe Lys Gly Gln Gly Thr Tyr
 180 185 190
 His Phe Asn Lys Lys Trp Gln Glu Ile Leu Ser Pro His Phe Ser Tyr
 195 200 205
 Ala Glu Ala Arg Phe Ser Gly Lys Ala Gln Ile Thr Asp Thr Asn Leu
 210 215 220
 Phe Phe Pro Lys Phe Ser Gly Lys Ile Thr Ala Arg Glu Asn Glu Leu
 225 230 235 240
 Leu Ile His Ala Lys Phe Gly Ser Pro Asn Glu Pro Ile Lys Pro Glu
 245 250 255
 Thr Thr Ser Ile Leu Ile His Gly Gln Phe Cys Ser Leu Pro Thr Gln
 260 265 270
 Pro Ser Phe
 275

<210>207

<211>231

<212>PRT

<213>Chlamydia pneumoniae

<400>207

Asn Leu Lys Leu Pro Leu Tyr Ser Ser Thr Asp Asn Phe Val Leu Cys
 1 5 10 15
 Gln Leu Ser Leu Val Ser Asn His Leu Ala Pro Phe His Leu Lys Lys
 20 25 30
 Leu Thr Phe Ser Phe His Thr Asp Gly Gly Lys Phe Val Thr Lys Gly

35 40 45
 Asn Leu Gln Ala Leu Ile Glu Asn Pro Asp Tyr Pro Asp Leu Asn Asn
 50 55 60
 Thr Arg Ile Leu Ile Pro Asp Leu Leu Leu Ser Leu Asp Glu Ser Ser
 65 70 75 80
 Thr Ser Pro Ser Ser Lys Asp Leu Lys Ile Gln Gly Ser Gly Glu Ile
 85 90 95
 Phe Ser Leu Pro Leu Asp Ser Ile Thr Lys Thr Tyr Gly Lys Gln Val
 100 105 110
 Arg Leu Ser Pro Tyr Phe Gly Ser Ser Gly Asp Leu Asn Phe Val Val
 115 120 125
 Asn Tyr Asn Pro Lys Asp Gln Asn Lys Leu Thr Leu Leu Ser Xaa Phe
 130 135 140
 Lys Ser Glu Ala Leu Leu Gly Glu Leu Lys Leu Val Met Asp Phe Ser
 145 150 155 160
 Met Lys Leu Ser Ser Gly Thr Gln Gly Thr Leu Gln Trp Glu Val Ser
 165 170 175
 Pro Glu Arg Tyr Ala Ser Phe Phe Lys Asn Ala Ser Cys Ser Pro Thr
 180 185 190
 Cys Leu Leu His Arg Thr Ala Asn Val Arg Leu Asp Ile Ser Lys Leu
 195 200 205
 Ser Cys Pro Glu Glu Thr Lys Gly Leu Ser Cys Leu Thr Leu Leu Ala
 210 215 220
 Ala Glu Asp Leu Lys Val His
 225 230
 <210>208
 <211>415
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>208
 Asn Cys Lys Cys Thr Leu Arg His Leu Lys Thr Leu Leu Ser Arg Gly
 1 5 10 15
 Asn Gln Arg Phe Ile Leu Ser His Ala Ser Cys Arg Arg Gly Leu Glu
 20 25 30
 Gly Ser Leu Glu Ala Thr Pro Leu Ile Phe Tyr Asp Asn Val Ser Lys
 35 40 45
 Glu Thr Phe Ile Ile Asn Asp Phe Xaa Gly Ser Leu Arg Ala Asn Asn
 50 55 60
 Leu Asp Ala Lys Ile Glu Tyr Asp Leu Lys Gly Ser Cys Leu Ala Pro
 65 70 75 80
 Arg Gln Asp Ser Lys Thr Leu Ala Glu Phe Ser Leu Glu Gly Gln Val
 85 90 95
 Asp His Leu Phe Ser Pro Glu Ser Arg Glu Phe Lys Gln Thr Ala Asn
 100 105 110
 Trp Ile His Ile Pro Ser Ser Phe Ile Ala Gly Ile Ile Pro Met Ser
 115 120 125
 Pro Gly Leu Lys Ala Gln Ile Ser Ser Leu Ala Gly Pro Arg Ile Asn
 130 135 140
 Val Ser Ile Lys Asn Ala Phe Arg Phe Gly Glu Gly Pro Val Asp Ile
 145 150 155 160
 Met Val Asp Ser Glu Asn Leu Gln Ala Gln Ile Pro Leu Ile Leu Asn
 165 170 175
 Glu Lys Ser Ile Leu Leu Arg Glu Asn Leu Thr Ala His Leu Ser Ile
 180 185 190
 Asn Glu Asp Val Asn Lys Ala Phe Leu Gln Glu Phe Asn Pro Leu Leu
 195 200 205
 Ala Gly Gly Ala Tyr Ser Gln Tyr Pro Val Thr Leu Glu Ile Asp Lys
 210 215 220
 Gln Asn Phe Tyr Leu Pro Ile Arg Pro Tyr Ser Phe Glu Glu Phe Arg
 225 230 235 240
 Ile Gln Ser Ala Thr Leu Asp Met Gly Lys Ile Ser Ile Ala Asn Thr
 245 250 255
 Gly Thr Met Tyr Ala Leu Phe Gln Phe Leu Asp Ile Thr Asp Gln Lys
 260 265 270

Gln Phe Val Glu Ser Trp Phe Thr Pro Ile Phe Phe Ser Val Gln Lys
 275 280 285
 Gly Ser Ile Ile Cys Lys Arg Leu Asp Ala Leu Ile Asp Arg Arg Ile
 290 295 300
 Arg Leu Ala Leu Trp Gly Lys Thr Asp Ile Ala His Asp Arg Leu Phe
 305 310 315 320
 Met Thr Leu Gly Ile Asp Pro Glu Val Ile Lys Lys Tyr Phe His Asn
 325 330 335
 Thr Ser Leu Lys Thr Lys Asn Phe Phe Leu Ile Lys Ile Arg Gly Ser
 340 345 350
 Ile Ser Ser Pro Glu Val Asp Trp Ser Ser Ala Tyr Ala Arg Ile Ala
 355 360 365
 Leu Leu Lys Ser Tyr Ser Leu Gly Asn Pro Phe Ser Ser Leu Ala Asp
 370 375 380
 Lys Leu Phe Ser Ser Leu Gly Asp Ser Thr Pro Pro Pro Thr Val His
 385 390 395 400
 Pro Phe Pro Trp Glu Lys Ser Asn Phe Asp Ser Ile Glu Asn Lys
 405 410 415

<210>209

<211>458

<212>PRT

<213>Chlamydia pneumoniae

<400>209

Leu Leu Gly Ile Lys Leu Met Arg Lys Arg His Ser Phe Asp Ser Thr
 1 5 10 15
 Ser Thr Lys Lys Glu Ala Val Ser Lys Ala Ile Gln Lys Ile Ile Lys
 20 25 30
 Ile Met Glu Thr Thr Asp Pro Ser Leu Asn Val Glu Thr Pro Asn Ala
 35 40 45
 Glu Ile Glu Ser Ile Leu Gln Glu Ile Lys Glu Ile Lys Gln Lys Leu
 50 55 60
 Ser Lys Gln Ala Glu Asp Leu Gly Leu Leu Glu Lys Tyr Cys Ser Gln
 65 70 75 80
 Glu Thr Leu Ser Asn Leu Glu Asn Thr Asn Ala Ser Leu Lys Leu Ser
 85 90 95
 Ile Gly Ser Val Ile Glu Glu Leu Ala Ser Leu Lys Gln Leu Val Glu
 100 105 110
 Glu Ser Ile Glu Glu Ser Leu Gly Gln Gln Asp Gln Leu Ile Gln Ser
 115 120 125
 Val Leu Ile Glu Ile Ser Asp Lys Phe Leu Ser Ser Ile Gly Glu Thr
 130 135 140
 Leu Ser Gly Asn Leu Asp Met Asn Gln Asn Val Ile Gln Gly Leu Leu
 145 150 155 160
 Ile Lys Glu Asn Pro Glu Lys Ser Glu Ala Ala Ser Val Gly Tyr Val
 165 170 175
 Gln Thr Leu Leu Glu Pro Leu Ser Lys Arg Ile Gly Glu Thr His Lys
 180 185 190
 Lys Val Ala Thr His Asp Val Asn Ile Ser Ser Leu Gln Phe His Met
 195 200 205
 Met Ser Val Ala Gly Gly Arg Phe Arg Gly His Ile Asp Met Asn Gly
 210 215 220
 Tyr Arg Val Leu Gly Leu Gly Glu Pro Lys Asn Gly Glu Asp Ala Val
 225 230 235 240
 Ser Lys Asp Tyr Leu Glu Arg Tyr Val Ser Ser Gln Leu Thr Ile Asp
 245 250 255
 Lys Val Glu Asp Lys Pro Ile Thr Lys Pro Asn Lys Gly Lys Leu Leu
 260 265 270
 Tyr Ser Gln Gly Thr Ser Pro Lys Leu Glu Gly Pro Leu Pro Leu Gly
 275 280 285
 Leu Leu Thr Ser Gly Ile Ser Gly Phe Thr Trp Lys Ser Ala Ser Lys
 290 295 300
 Ser Asn Asp Gly Ser Phe Pro Phe Ser Ala Leu Arg His Lys Glu Thr
 305 310 315 320
 Glu Ser Asp Thr Asp Cys Phe Gln Ile Thr Ser Thr Thr Leu Ser Gly

325 330 335
 Asn Gln Ala Gly Thr Tyr Thr Trp Ser Leu Ser Leu Lys Val Leu Val
 340 345 350
 Pro Ser Ile Phe Gln Ile Glu Lys Pro Glu Val Gln Leu Ser Leu Val
 355 360 365
 Tyr Ser Tyr Glu Asp Trp Leu Pro Ile Asp Asn Ile Phe Asn Met Ser
 370 375 380
 Gln Pro Arg Thr Ile Pro Leu Ala Leu Leu Gly Gln Thr Met Leu Ala
 385 390 395 400
 Gly Gln Lys Tyr Asp Ile Leu Glu Leu Ala Ala His Gln Thr Asn Gln
 405 410 415
 Thr Leu Met Ile Ser Pro Asn Cys Ser Arg Phe Ser Leu Gln Leu Lys
 420 425 430
 Gln Thr Asn Gln Phe Glu Asn Ser Pro Val Asp Phe Tyr Ile Val His
 435 440 445
 Ala Ala His Ser Cys His Trp Ser Gly Phe
 450 455

<210>210

<211>226

<212>PRT

<213>Chlamydia pneumoniae

<400>210

Met Thr Ile Arg Val Arg Asn Leu Ala Tyr Ser Val Asn Lys Lys Lys
 1 5 10 15
 Ile Leu Asp Gly Val Thr Phe Ser Leu Glu Arg Gly His Ile Thr Leu
 20 25 30
 Phe Val Gly Lys Ser Gly Ser Gly Lys Thr Met Ile Leu Arg Ala Leu
 35 40 45
 Ala Gly Leu Val Gln Pro Thr Gln Gly Asp Ile Trp Ile Glu Gly Glu
 50 55 60
 Ala Pro Ala Leu Val Phe Gln Gln Pro Glu Leu Phe Ser His Met Thr
 65 70 75 80
 Val Leu Gly Asn Cys Thr His Pro Gln Ile His Ile Lys Gly Arg Ser
 85 90 95
 Thr Glu Glu Ala Arg Glu Lys Ala Phe Glu Leu Leu His Leu Leu Asp
 100 105 110
 Ile Glu Glu Val Ala Lys Asn Tyr Pro Asp Gln Leu Ser Gly Gly Gln
 115 120 125
 Lys Gln Arg Val Ala Ile Val Arg Ser Leu Cys Met Asp Lys His Thr
 130 135 140
 Leu Leu Phe Asp Glu Pro Thr Ser Ala Leu Asp Pro Phe Ala Thr Ala
 145 150 155 160
 Ser Phe Arg His Leu Leu Glu Thr Leu Arg Asp Gln Glu Leu Thr Val
 165 170 175
 Gly Leu Thr Thr His Asp Met Gln Phe Val His Ser Cys Leu Asp Arg
 180 185 190
 Ile Tyr Leu Ile Asp Gln Gly Thr Val Ala Gly Val Tyr Asp Lys Arg
 195 200 205
 Asp Gly Glu Leu Asp Ser Gly His Pro Leu Ser Lys Tyr Ile His Ser
 210 215 220
 Ala Gln
 225

<210>211

<211>220

<212>PRT

<213>Chlamydia pneumoniae

<400>211

Glu Val Gly Val Asp His Trp Leu Ala Ile Ala Arg Leu Leu Leu Arg
 1 5 10 15
 Gly Cys Gly Tyr Thr Leu Cys Val Ser Gly Ile Gly Ile Leu Cys Gly
 20 25 30
 Ser Ile Leu Gly Leu Leu Ile Gly Thr Val Thr Ser Leu Tyr Phe Pro
 35 40 45
 Ser Lys Leu Thr Lys Leu Leu Ala Asn Ser Tyr Val Thr Val Ile Arg

50 55 60
 Gly Thr Pro Leu Phe Ile Gln Ile Leu Ile Ile Tyr Phe Gly Leu Pro
 65 70 75 80
 Glu Val Leu Pro Ile Glu Pro Thr Pro Leu Val Ala Gly Ile Ile Ala
 85 90 95
 Leu Ser Met Asn Ser Ala Ala Tyr Leu Ala Glu Asn Ile Arg Gly Gly
 100 105 110
 Ile Asn Ser Leu Ser Ile Gly Gln Trp Glu Ser Ala Met Val Leu Gly
 115 120 125
 Tyr Lys Lys Tyr Gln Ile Phe Val Tyr Ile Ile Tyr Pro Gln Val Phe
 130 135 140
 Lys Asn Ile Leu Pro Ser Leu Thr Asn Glu Phe Val Ser Leu Ile Lys
 145 150 155 160
 Glu Ser Ser Ile Leu Met Val Val Gly Val Pro Glu Leu Thr Lys Val
 165 170 175
 Thr Lys Asp Ile Val Ser Arg Glu Leu Asn Pro Met Glu Met Tyr Leu
 180 185 190
 Ile Cys Ala Gly Leu Tyr Phe Leu Met Thr Thr Ser Phe Ser Cys Ile
 195 200 205
 Ser Arg Leu Ser Glu Lys Arg Arg Ser Tyr Asp Asn
 210 215 220
 <210>212
 <211>147
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>212
 Met Lys Lys Lys Val Thr Ile Asp Glu Ala Leu Lys Glu Ile Leu Arg
 1 5 10 15
 Leu Glu Gly Ala Ala Thr Gln Glu Glu Leu Cys Ala Lys Leu Leu Ala
 20 25 30
 Gln Gly Phe Ala Thr Thr Gln Ser Val Ser Arg Trp Leu Arg Lys
 35 40 45
 Ile Gln Ala Val Lys Val Ala Gly Glu Arg Gly Ala Arg Tyr Ser Leu
 50 55 60
 Pro Ser Ser Thr Glu Lys Thr Thr Thr Arg His Leu Val Leu Ser Ile
 65 70 75 80
 Arg His Asn Ala Ser Leu Ile Val Ile Arg Thr Val Pro Gly Ser Ala
 85 90 95
 Ser Trp Ile Ala Ala Leu Leu Asp Gln Gly Leu Lys Asp Glu Ile Leu
 100 105 110
 Gly Thr Leu Ala Gly Asp Asp Thr Ile Phe Val Thr Pro Ile Asp Glu
 115 120 125
 Gly Arg Leu Pro Leu Leu Met Val Ser Ile Ala Asn Leu Leu Gln Val
 130 135 140
 Phe Leu Asp
 145
 <210>213
 <211>344
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>213
 Met Leu Thr Leu Gly Leu Glu Ser Ser Cys Asp Glu Thr Ala Cys Ala
 1 5 10 15
 Ile Val Asn Glu Asp Lys Gln Ile Leu Ala Asn Ile Ile Ala Ser Gln
 20 25 30
 Asp Ile His Ala Ser Tyr Gly Gly Val Val Pro Glu Leu Ala Ser Arg
 35 40 45
 Ala His Leu His Ile Phe Pro Gln Val Ile Asn Lys Ala Leu Gln Gln
 50 55 60
 Ala Asn Leu Leu Ile Glu Asp Met Asp Leu Ile Ala Val Thr Gln Thr
 65 70 75 80
 Pro Gly Leu Ile Gly Ser Leu Ser Val Gly Val His Phe Gly Lys Gly
 85 90 95
 Ile Ala Ile Gly Ala Lys Lys Ser Leu Ile Gly Val Asn His Val Glu

100 105 110
 Ala His Leu Tyr Ala Ala Tyr Met Ala Ala Gln Asn Val Gln Phe Pro
 115 120 125
 Ala Leu Gly Leu Val Val Ser Gly Ala His Thr Ala Ala Phe Phe Ile
 130 135 140
 Glu Asn Pro Thr Ser Tyr Lys Leu Ile Gly Lys Thr Arg Asp Asp Ala
 145 150 155 160
 Ile Gly Glu Thr Phe Asp Lys Val Gly Arg Phe Leu Gly Leu Pro Tyr
 165 170 175
 Pro Ala Gly Pro Leu Ile Glu Lys Leu Ala Leu Glu Gly Ser Glu Asp
 180 185 190
 Ser Tyr Pro Phe Ser Pro Ala Lys Val Pro Asn Tyr Asp Phe Ser Phe
 195 200 205
 Ser Gly Leu Lys Thr Ala Val Leu Tyr Ala Ile Lys Gly Asn Asn Ser
 210 215 220
 Ser Pro Arg Ser Pro Ala Pro Glu Ile Ser Leu Glu Lys Gln Arg Asp
 225 230 235 240
 Ile Ala Ala Ser Phe Gln Lys Ala Ala Cys Thr Thr Ile Ala Gln Lys
 245 250 255
 Leu Pro Thr Ile Ile Lys Glu Phe Ser Cys Arg Ser Ile Leu Ile Gly
 260 265 270
 Gly Gly Val Ala Ile Asn Glu Tyr Phe Arg Ser Ala Ile Gln Thr Ala
 275 280 285
 Cys Asn Leu Pro Val Tyr Phe Pro Pro Ala Lys Leu Cys Ser Asp Asn
 290 295 300
 Ala Ala Met Ile Ala Gly Leu Gly Gly Glu Asn Phe Gln Lys Asn Ser
 305 310 315 320
 Ser Ile Pro Glu Ile Arg Ile Cys Ala Arg Tyr Gln Trp Glu Ser Val
 325 330 335
 Ser Pro Phe Ser Leu Ala Ser Pro
 340

<210>214

<211>514

<212>PRT

<213>Chlamydia pneumoniae

<400>214

Met Arg Lys Ile Ser Val Gly Ile Cys Ile Thr Ile Leu Leu Ser Leu
 1 5 10 15
 Ser Val Val Leu Gln Gly Cys Lys Glu Ser Ser His Ser Ser Thr Ser
 20 25 30
 Arg Gly Glu Leu Ala Ile Asn Ile Arg Asp Glu Pro Arg Ser Leu Asp
 35 40 45
 Pro Arg Gln Val Arg Leu Leu Ser Glu Ile Ser Leu Val Lys His Ile
 50 55 60
 Tyr Glu Gly Leu Val Gln Glu Asn Asn Leu Ser Gly Asn Ile Glu Pro
 65 70 75 80
 Ala Leu Ala Glu Asp Tyr Ser Leu Ser Ser Asp Gly Leu Thr Tyr Thr
 85 90 95
 Phe Lys Leu Lys Ser Ala Phe Trp Ser Asn Gly Asp Pro Leu Thr Ala
 100 105 110
 Glu Asp Phe Ile Glu Ser Trp Lys Gln Val Ala Thr Gln Glu Val Ser
 115 120 125
 Gly Ile Tyr Ala Phe Ala Leu Asn Pro Ile Lys Asn Val Arg Lys Ile
 130 135 140
 Gln Glu Gly His Leu Ser Ile Asp His Phe Gly Val His Ser Pro Asn
 145 150 155 160
 Glu Ser Thr Leu Val Val Thr Leu Glu Ser Pro Thr Ser His Phe Leu
 165 170 175
 Lys Leu Leu Ala Leu Pro Val Phe Phe Pro Val His Lys Ser Gln Arg
 180 185 190
 Thr Leu Gln Ser Lys Ser Leu Pro Ile Ala Ser Gly Ala Phe Tyr Pro
 195 200 205
 Lys Asn Ile Lys Gln Lys Gln Trp Ile Lys Leu Ser Lys Asn Pro His
 210 215 220

Tyr Tyr Asn Gln Ser Gln Val Glu Thr Lys Thr Ile Thr Ile His Phe
 225 230 235 240
 Ile Pro Asp Ala Asn Thr Ala Ala Lys Leu Phe Asn Gln Gly Lys Leu
 245 250 255
 Asn Trp Gln Gly Pro Pro Trp Gly Glu Arg Ile Pro Gln Glu Thr Leu
 260 265 270
 Ser Asn Leu Gln Ser Lys Gly His Leu His Ser Phe Asp Val Ala Gly
 275 280 285
 Thr Ser Trp Leu Thr Phe Asn Ile Asn Lys Phe Pro Leu Asn Asn Met
 290 295 300
 Lys Leu Arg Glu Ala Leu Ala Ser Ala Leu Asp Lys Glu Ala Leu Val
 305 310 315 320
 Ser Thr Ile Phe Leu Gly Arg Ala Lys Thr Ala Asp His Leu Leu Pro
 325 330 335
 Thr Asn Ile His Ser Tyr Pro Glu His Gln Lys Gln Glu Met Ala Gln
 340 345 350
 Arg Gln Ala Tyr Ala Lys Lys Leu Phe Lys Glu Ala Leu Glu Glu Leu
 355 360 365
 Gln Ile Thr Ala Lys Asp Leu Glu His Leu Asn Leu Ile Phe Pro Val
 370 375 380
 Ser Ser Ser Ala Ser Ser Leu Leu Val Gln Leu Ile Arg Glu Gln Trp
 385 390 395 400
 Lys Glu Ser Leu Gly Phe Ala Ile Pro Ile Val Gly Lys Glu Phe Ala
 405 410 415
 Leu Leu Gln Ala Asp Leu Ser Ser Gly Asn Phe Ser Leu Ala Thr Gly
 420 425 430
 Gly Trp Phe Ala Asp Phe Ala Asp Pro Met Ala Phe Leu Thr Ile Phe
 435 440 445
 Ala Tyr Pro Ser Gly Val Pro Pro Tyr Ala Ile Asn His Lys Asp Phe
 450 455 460
 Leu Glu Ile Leu Gln Asn Ile Glu Gln Glu Gln Asp His Gln Lys Arg
 465 470 475 480
 Ser Glu Leu Val Ser Gln Ala Ser Leu Tyr Leu Glu Thr Phe His Ile
 485 490 495
 Ile Glu Pro Ile Tyr His Asp Ala Phe Gln Phe Ala Met Asn Lys Lys
 500 505 510
 Leu Ser

<210>215

<211>494

<212>PRT

<213>Chlamydia pneumoniae

<400>215

Lys Glu Met Pro Arg Ser Leu Asp Pro Gly Lys Thr Arg Leu Ile Ala
 1 5 10 15
 Asp Gln Thr Leu Met Arg His Leu Tyr Glu Gly Leu Val Glu Glu His
 20 25 30
 Ser Gln Asn Gly Glu Ile Lys Pro Ala Leu Ala Glu Ser Tyr Thr Ile
 35 40 45
 Ser Glu Asp Gly Thr Arg Tyr Thr Phe Lys Ile Lys Asn Ile Leu Trp
 50 55 60
 Ser Asn Gly Asp Pro Leu Thr Ala Gln Asp Phe Val Ser Ser Trp Lys
 65 70 75 80
 Glu Ile Leu Lys Glu Asp Ala Ser Ser Val Tyr Leu Tyr Ala Phe Leu
 85 90 95
 Pro Ile Lys Asn Ala Arg Ala Ile Phe Asp Asp Thr Glu Ser Pro Glu
 100 105 110
 Asn Leu Gly Val Arg Ala Leu Asp Lys Arg His Leu Glu Ile Gln Leu
 115 120 125
 Glu Thr Pro Cys Ala His Phe Leu His Phe Leu Thr Leu Pro Ile Phe
 130 135 140
 Phe Pro Val His Glu Thr Leu Arg Asn Tyr Ser Thr Ser Phe Glu Glu
 145 150 155 160
 Met Pro Ile Thr Cys Gly Ala Phe Arg Pro Val Ser Leu Glu Lys Gly

165 170 175
 Leu Arg Leu His Leu Glu Lys Asn Pro Met Tyr His Asn Lys Ser Arg
 180 185 190
 Val Lys Leu His Lys Ile Ile Val Gln Phe Ile Ser Asn Ala Asn Thr
 195 200 205
 Ala Ala Ile Leu Phe Lys His Lys Lys Leu Asp Trp Gln Gly Pro Pro
 210 215 220
 Trp Gly Glu Pro Ile Pro Pro Glu Ile Ser Ala Ser Leu His Gln Asp
 225 230 235 240
 Asp Gln Leu Phe Ser Leu Pro Gly Ala Ser Thr Thr Trp Leu Leu Phe
 245 250 255
 Asn Ile Gln Lys Lys Pro Trp Asn Asn Ala Lys Leu Arg Lys Ala Leu
 260 265 270
 Ser Leu Ala Ile Asp Lys Asp Met Leu Thr Lys Val Val Tyr Gln Gly
 275 280 285
 Leu Ala Glu Pro Thr Asp His Ile Leu His Pro Arg Leu Tyr Pro Gly
 290 295 300
 Thr Tyr Pro Glu Arg Lys Arg Gln Asn Glu Arg Ile Leu Glu Ala Gln
 305 310 315 320
 Gln Leu Phe Glu Glu Ala Leu Asp Glu Leu Gln Met Thr Arg Glu Asp
 325 330 335
 Leu Glu Lys Glu Thr Leu Thr Phe Ser Thr Phe Ser Phe Ser Tyr Gly
 340 345 350
 Arg Ile Cys Gln Met Leu Arg Glu Gln Trp Lys Lys Val Leu Lys Phe
 355 360 365
 Thr Ile Pro Ile Val Gly Gln Glu Phe Phe Thr Ile Gln Lys Asn Phe
 370 375 380
 Leu Glu Gly Asn Tyr Ser Leu Thr Val Asn Gln Trp Thr Ala Ala Phe
 385 390 395 400
 Ile Asp Pro Met Ser Tyr Leu Met Ile Phe Ala Asn Pro Gly Gly Ile
 405 410 415
 Ser Pro Tyr His Leu Gln Asp Ser His Phe Gln Thr Leu Leu Ile Lys
 420 425 430
 Ile Thr Gln Glu His Lys Lys His Leu Arg Asn Gln Leu Ile Ile Glu
 435 440 445
 Ala Leu Asp Tyr Leu Glu His Cys His Ile Leu Glu Pro Leu Cys His
 450 455 460
 Pro Asn Leu Arg Ile Ala Leu Asn Lys Asn Ile Lys Asn Phe Asn Leu
 465 470 475 480
 Phe Val Arg Arg Thr Ser Asp Phe Arg Phe Ile Glu Lys Leu
 485 490

<210>216

<211>448

<212>PRT

<213>Chlamydia pneumoniae

<400>216

Leu Lys Phe Asp Ser Lys Phe Ile Lys Val Ile Phe Lys Met Phe Ser
 1 5 10 15
 Arg Trp Ile Thr Leu Phe Leu Leu Phe Ile Ser Leu Thr Gly Cys Ser
 20 25 30
 Ser Tyr Ser Ser Lys His Lys Gln Ser Leu Ile Ile Pro Ile His Asp
 35 40 45
 Asp Pro Val Ala Phe Ser Pro Glu Gln Ala Lys Arg Ala Met Asp Leu
 50 55 60
 Ser Ile Ala Gln Leu Leu Phe Asp Gly Leu Thr Arg Glu Thr His Arg
 65 70 75 80
 Glu Ser Asn Asp Leu Glu Leu Ala Ile Ala Ser Arg Tyr Thr Val Ser
 85 90 95
 Glu Asp Phe Cys Ser Tyr Thr Phe Phe Ile Lys Asp Ser Ala Leu Trp
 100 105 110
 Ser Asp Gly Thr Pro Ile Thr Ser Glu Asp Ile Arg Asn Ala Trp Glu
 115 120 125
 Tyr Ala Gln Glu Asn Ser Pro His Ile Gln Ile Phe Gln Gly Leu Asn
 130 135 140

Phe Ser Thr Pro Ser Ser Asn Ala Ile Thr Ile His Leu Asp Ser Pro
 145 150 155 160
 Asn Pro Asp Phe Pro Lys Leu Leu Ala Phe Pro Ala Phe Ala Ile Phe
 165 170 175
 Lys Pro Glu Asn Pro Lys Leu Phe Ser Gly Pro Tyr Thr Leu Val Glu
 180 185 190
 Tyr Phe Pro Gly His Asn Ile His Leu Lys Lys Asn Pro Asn Tyr Tyr
 195 200 205
 Asp Tyr His Cys Val Ser Ile Asn Ser Ile Lys Leu Leu Ile Ile Pro
 210 215 220
 Asp Ile Tyr Thr Ala Ile His Leu Leu Asn Arg Gly Lys Val Asp Trp
 225 230 235 240
 Val Gly Gln Pro Trp His Gln Gly Ile Pro Trp Glu Leu His Lys Gln
 245 250 255
 Ser Gln Tyr His Tyr Tyr Thr Tyr Pro Val Glu Gly Ala Phe Trp Leu
 260 265 270
 Cys Leu Asn Thr Lys Ser Pro His Leu Asn Asp Leu Gln Asn Arg His
 275 280 285
 Arg Leu Ala Thr Cys Ile Asp Lys Arg Ser Ile Ile Glu Glu Ala Leu
 290 295 300
 Gln Gly Thr Gln Gln Pro Ala Glu Thr Leu Ser Arg Gly Ala Pro Gln
 305 310 315 320
 Pro Asn Gln Tyr Lys Lys Gln Lys Pro Leu Thr Pro Gln Glu Lys Leu
 325 330 335
 Val Leu Thr Tyr Pro Ser Asp Ile Leu Arg Cys Gln Arg Ile Ala Glu
 340 345 350
 Ile Leu Lys Glu Gln Trp Lys Ala Ala Gly Ile Asp Leu Ile Leu Glu
 355 360 365
 Gly Leu Glu Tyr His Leu Phe Val Asn Lys Arg Lys Val Gln Asp Tyr
 370 375 380
 Ala Ile Ala Thr Gln Thr Gly Val Ala Tyr Tyr Pro Gly Ala Asn Leu
 385 390 395 400
 Ile Ser Glu Glu Asp Lys Leu Leu Gln Asn Phe Glu Ile Ile Pro Ile
 405 410 415
 Tyr Tyr Leu Ser Tyr Asp Tyr Leu Thr Gln Asp Phe Ile Glu Gly Val
 420 425 430
 Ile Tyr Asn Ala Ser Gly Ala Val Asp Leu Lys Tyr Thr Tyr Phe Pro
 435 440 445

<210>217

<211>534

<212>PRT

<213>Chlamydia pneumoniae

<400>217

Gln Ile Glu Tyr Tyr Ile Met Lys Met His Arg Leu Lys Pro Thr Leu
 1 5 10 15
 Lys Ser Leu Ile Pro Asn Leu Leu Phe Leu Leu Leu Thr Leu Ser Ser
 20 25 30
 Cys Ser Lys Gln Lys Gln Glu Pro Leu Gly Lys His Leu Val Ile Ala
 35 40 45
 Met Ser His Asp Leu Ala Asp Leu Asp Pro Arg Asn Ala Tyr Leu Ser
 50 55 60
 Arg Asp Ala Ser Leu Ala Lys Ala Leu Tyr Glu Gly Leu Thr Arg Glu
 65 70 75 80
 Thr Asp Gln Gly Ile Ala Leu Ala Leu Ala Glu Ser Tyr Thr Leu Ser
 85 90 95
 Lys Asp His Lys Val Tyr Thr Phe Lys Leu Arg Pro Ser Val Trp Ser
 100 105 110
 Asp Gly Thr Pro Leu Thr Ala Tyr Asp Phe Glu Lys Ser Ile Lys Gln
 115 120 125
 Leu Tyr Phe Glu Glu Phe Ser Pro Ser Ile His Thr Leu Leu Gly Val
 130 135 140
 Ile Lys Asn Ser Ser Ala Ile His Asn Ala Gln Lys Ser Leu Glu Thr
 145 150 155 160
 Leu Gly Ile Gln Ala Lys Asp Asp Leu Thr Leu Val Ile Thr Leu Glu

165 170 175
 Gln Pro Phe Pro Tyr Phe Leu Thr Leu Ile Ala Arg Pro Val Phe Ser
 180 185 190
 Pro Val His His Thr Leu Arg Glu Ser Tyr Lys Lys Gly Thr Pro Pro
 195 200 205
 Ser Thr Tyr Ile Ser Asn Gly Pro Phe Val Leu Lys Lys His Xaa His
 210 215 220
 Gln Asn Tyr Leu Ile Leu Glu Lys Asn Pro His Tyr Tyr Asp His Glu
 225 230 235 240
 Ser Val Lys Leu Asp Arg Val Thr Leu Lys Ile Ile Pro Asp Ala Ser
 245 250 255
 Thr Ala Thr Lys Leu Phe Lys Ser Lys Ser Ile Asp Trp Ile Gly Ser
 260 265 270
 Pro Trp Ser Ala Pro Ile Ser Asn Glu Asp Gln Lys Val Leu Ser Gln
 275 280 285
 Glu Lys Ile Leu Thr Tyr Ser Val Ser Ser Thr Thr Leu Leu Ile Tyr
 290 295 300
 Asn Leu Gln Lys Pro Leu Ile Gln Asn Lys Ala Leu Arg Lys Ala Ile
 305 310 315 320
 Ala His Ala Ile Asp Arg Lys Ser Ile Leu Arg Leu Val Pro Ser Gly
 325 330 335
 Gln Glu Ala Val Thr Leu Val Pro Pro Asn Leu Ser Gln Leu Asn Leu
 340 345 350
 Gln Lys Glu Ile Ser Thr Glu Glu Arg Gln Thr Lys Ala Arg Ala Tyr
 355 360 365
 Phe Gln Glu Ala Lys Glu Thr Leu Ser Glu Lys Glu Leu Ala Glu Leu
 370 375 380
 Ser Ile Leu Tyr Pro Ile Asp Ser Ser Asn Ser Ser Ile Ile Ala Gln
 385 390 395 400
 Glu Ile Gln Arg Gln Leu Lys Asp Thr Leu Gly Leu Lys Ile Lys Ile
 405 410 415
 Gln Gly Met Glu Tyr His Cys Phe Leu Lys Lys Arg Arg Gln Gly Asp
 420 425 430
 Phe Phe Ile Ala Thr Gly Gly Trp Ile Ala Glu Tyr Val Ser Pro Val
 435 440 445
 Ala Phe Leu Ser Ile Leu Gly Asn Pro Arg Asp Leu Thr Gln Trp Arg
 450 455 460
 Asn Ser Asp Tyr Glu Lys Thr Leu Glu Lys Leu Tyr Leu Pro His Ala
 465 470 475 480
 Tyr Lys Glu Asn Leu Lys Arg Ala Glu Met Ile Ile Glu Glu Glu Thr
 485 490 495
 Pro Ile Ile Pro Leu Tyr His Gly Lys Tyr Ile Tyr Ala Ile His Pro
 500 505 510
 Lys Ile Gln Asn Thr Phe Gly Ser Leu Leu Gly His Thr Asp Leu Lys
 515 520 525
 Asn Ile Asp Ile Leu Ser
 530

<210>218

<211>296

<212>PRT

<213>Chlamydia pneumoniae

<400>218

Leu Ser Leu Val Phe Ser Tyr Ile Lys Asn Arg Ile Leu Phe Asn Leu
 1 5 10 15
 Leu Ser Leu Trp Ile Val Leu Thr Leu Thr Phe Leu Val Met Lys Thr
 20 25 30
 Ile Pro Gly Asp Pro Phe Asn Asp Glu Gly Cys Asn Val Leu Ser Glu
 35 40 45
 Glu Val Leu Gln Thr Leu Lys Ser Arg Tyr Gly Leu Asp Lys Pro Leu
 50 55 60
 Tyr Gln Gln Tyr Thr Gln Tyr Leu His Ser Ile Ala Lys Leu Asp Phe
 65 70 75 80
 Gly Asn Ser Leu Val Tyr Lys Asp Arg Lys Val Thr Asn Ile Ile Ser
 85 90 95

WO 99/27105

PCT/IB98/01890

Thr Ala Phe Pro Ile Ser Ala Ile Leu Gly Leu Gln Ser Leu Phe Leu
 100 105 110
 Ser Ile Gly Gly Gly Ile Ala Leu Gly Thr Ile Ala Ala Leu Lys Lys
 115 120 125
 Lys Lys Gln Arg Arg Tyr Ile Leu Gly Ala Ser Ile Leu Gln Ile Ser
 130 135 140
 Ile Pro Ala Phe Ile Phe Ala Thr Leu Leu Gln Tyr Val Phe Ala Val
 145 150 155 160
 Lys Ile Pro Leu Leu Pro Ile Ala Cys Trp Gly Ser Phe Thr His Thr
 165 170 175
 Ile Leu Pro Thr Leu Ala Leu Ala Val Thr Pro Met Ala Phe Ile Ile
 180 185 190
 Gln Leu Thr Tyr Ser Ser Val Ser Ala Ala Leu Asn Lys Asp Tyr Val
 195 200 205
 Leu Leu Ala Tyr Ala Lys Gly Leu Ser Pro Leu Lys Val Val Ile Lys
 210 215 220
 His Ile Leu Pro Tyr Ala Ile Phe Pro Thr Ile Ser Tyr Ser Ala Phe
 225 230 235 240
 Leu Thr Thr Thr Val Ile Thr Gly Thr Phe Ala Ile Glu Asn Ile Phe
 245 250 255
 Cys Ile Pro Gly Leu Gly Lys Trp Phe Ile Cys Ser Ile Lys Gln Arg
 260 265 270
 Asp Tyr Pro Val Ala Leu Gly Leu Ser Val Phe Tyr Gly Thr Tyr Leu
 275 280 285
 Cys Ser Leu Leu Tyr Phe Leu Thr
 290 295

<210>219

<211>284

<212>PRT

<213>Chlamydia pneumoniae

<400>219

Met Asp Asn Tyr Leu Leu Asn Ile Lys Asp Leu Thr Ile Thr Ser Thr
 1 5 10 15
 Asn Pro Lys Arg Thr Leu Ile Glu Asn Leu Ser Leu Gln Leu Lys Glu
 20 25 30
 Asn Arg Asn Leu Ala Leu Val Gly Glu Ser Gly Ser Gly Lys Thr Thr
 35 40 45
 Ile Thr Lys Ala Ile Leu Gly Phe Leu Pro Glu Asn Cys Leu Ile Lys
 50 55 60
 Thr Gly Ser Ile Leu Phe Glu Asp Ile Asp Ile Thr Lys Leu Ser Pro
 65 70 75 80
 Lys Glu Leu His Lys Ile Arg Gly Gln Lys Ile Ala Thr Ile Leu Gln
 85 90 95
 Asn Ala Met Gly Ser Leu Thr Pro Ser Met Arg Ile Gly Met Gln Ile
 100 105 110
 Ile Glu Thr Leu Arg Gln His His Lys Met Asn Lys Glu Glu Ala Tyr
 115 120 125
 Asn Lys Ala Met Gln Leu Leu Thr Asp Val Cys Ile Pro Asn Pro Lys
 130 135 140
 Tyr Ser Phe Ser Gln Tyr Pro Phe Glu Leu Ser Gly Gly Met Arg Gln
 145 150 155 160
 Arg Val Val Ile Ala Ile Ala Leu Ala Ser Gln Pro Lys Leu Ile Leu
 165 170 175
 Ala Asp Glu Pro Thr Thr Ala Leu Asp Ser Met Ser Gln Ala Gln Val
 180 185 190
 Leu Arg Ile Leu Arg Asn Ile Gln Gln Gln Lys Gln Ala Thr Ile Leu
 195 200 205
 Leu Val Thr His Asn Leu Ser Leu Val Lys Glu Leu Cys Asn Asp Ile
 210 215 220
 Cys Ile Ile Lys Asp Gly Lys Leu Ile Glu Thr Gly Thr Val Glu Glu
 225 230 235 240
 Ile Phe Leu Ser Pro Lys His Pro Tyr Thr Leu Lys Leu Leu Asn Ala
 245 250 255
 Val Ser Lys Ile Pro Ile Lys Lys Thr Ser Ser Pro Ile Leu Lys Asn

260 265 270
 Lys Phe Gln Pro Leu Met Ser Met Gln Gly Gly Leu
 275 280
 <210>220
 <211>293
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>220
 Val Pro Thr Ser Asn Glu Tyr Ala Arg Trp Phe Met Thr Thr Leu Leu
 1 5 10 15
 Ser Ile Lys Asp Leu Ser Leu Thr Ile Arg Gly Lys Lys Ile Leu Asn
 20 25 30
 His Ile Asn Leu Asn Leu Ile Lys Gly Ser Tyr Leu Thr Ile Val Gly
 35 40 45
 Pro Ser Gly Ser Gly Lys Ser Ser Leu Ala Leu Thr Ile Leu Asp Leu
 50 55 60
 Leu Lys Pro Thr Thr Gly Thr Ile Thr Phe His Met Asp Pro Lys Ile
 65 70 75 80
 Pro Arg Ala Arg Lys Val Gln Val Ile Trp Gln Asp Ile Asp Ser Ser
 85 90 95
 Leu Asn Pro Cys Met Ser Ile Lys Gly Ile Ile Ser Glu Pro Leu Asn
 100 105 110
 Ile Ile Gly Thr Tyr Ser Lys Ala Glu Gln Asn Lys Glu Ile Tyr Asn
 115 120 125
 Val Leu Asp Leu Val Asn Leu Pro Lys Ser Val Leu His Leu Lys Pro
 130 135 140
 Tyr Lys Leu Ser Gly Gly Gln Lys Gln Arg Ile Ala Ile Ala Lys Ala
 145 150 155 160
 Leu Val Ser Lys Pro Glu Leu Leu Ile Cys Asp Glu Pro Leu Ser Ser
 165 170 175
 Leu Asp Thr Leu Asn Gln Ser Leu Ile Leu Asp Leu Phe Gln Thr Ile
 180 185 190
 Lys Lys Glu Tyr Gln Asn Thr Leu Leu Phe Ile Thr His Asp Met Ser
 195 200 205
 Ala Ala Tyr Tyr Ile Ala Asp Thr Ile Ala Val Met Asp Gln Gly Ser
 210 215 220
 Leu Val Glu His Ala Cys Arg Glu Lys Ile Phe Ser Thr Pro Lys His
 225 230 235 240
 Thr Thr Thr Gln Asp Leu Leu Asp Ala Ile Pro Ile Phe Ser Leu Ile
 245 250 255
 Ser Thr Glu Met Glu Pro Ser Glu Glu Tyr Glu Leu Gln Val Ala Ser
 260 265 270
 Lys Xaa Ile Asp Leu Glu Ile Thr Asn Ser Tyr Arg Lys Ile Arg Ile
 275 280 285
 Phe Asp Val Ser Gln
 290
 <210>221
 <211>279
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>221
 Ile Val Pro Leu Pro Gln Lys Asn Asn Lys Glu Thr Ser Cys Met Asn
 1 5 10 15
 Thr Tyr Thr Phe Ser Pro Thr Leu Gln Lys Ser Phe Ser Leu Phe Leu
 20 25 30
 Leu Glu Lys Leu Asp Ser Tyr Phe Phe Phe Gly Gly Thr Arg Thr Gln
 35 40 45
 Ile Leu Val Ile Thr Pro Thr Asn Ile Arg Leu Ala Lys Lys Arg
 50 55 60
 Gly Cys Lys Val Ser Thr Ile Glu Lys Ile Ile Lys Ile Leu Ser Phe
 65 70 75 80
 Ile Leu Leu Pro Leu Val Ile Ile Ala Phe Ile Leu Arg Tyr Phe Leu
 85 90 95
 His Lys Lys Phe Asp Lys Gln Phe Leu Cys Ile Pro Lys Val Ile Ser

100 105 110
 Asn Glu Asp Glu Ala Leu Leu Gly Ser Arg Pro Gln Ala Val Glu Lys
 115 120 125
 Ala Val Arg Glu Ile Ser Pro Ala Phe Phe Ser Ile Pro Arg Lys Tyr
 130 135 140
 Gln Leu Ile Arg Ile Asp Thr Pro Lys Asp Asp Ala Pro Ser Ile Leu
 145 150 155 160
 Phe Pro Ile Gly Ile Glu Ile Ile Leu Lys Asp Leu Cys Ile Asp Thr
 165 170 175
 Leu Lys Gln Ser Asn Leu Phe Leu Lys Arg Glu Met Asp Phe Leu Gly
 180 185 190
 His Pro Glu Glu Lys Ala Leu Phe Asp Ser Ile Cys Ser Ile Glu Lys
 195 200 205
 Asp Gln Glu Trp Met Ser Leu Glu Ser Lys Lys Leu Leu Ile Thr His
 210 215 220
 Phe Leu Lys Tyr Leu Phe Val Ser Gly Ile Glu Gln Leu Asn Pro Gly
 225 230 235 240
 Phe Asn Pro Glu Asn Gly Arg Gly Tyr Phe Ser Glu Ile Ser Thr Ala
 245 250 255
 Lys Ile His Phe His Gln His Gly Arg Tyr Gly Pro Ile Arg Ser Ser
 260 265 270
 Gly Pro Ile Met Lys Glu Ile
 275
 <210>222
 <211>272
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>222
 Ile Val Asp Arg Arg Ser Pro Ala Cys Tyr Asp Ser Ile Asn Ser Asp
 1 5 10 15
 Ala Ile Gly Val Ser Leu Leu Met Asp Ile Ser His Ile Leu Glu Asp
 20 25 30
 Leu Ala Tyr Asp Glu Gly Ile Leu Pro Arg Glu Ala Ile Glu Ala Ala
 35 40 45
 Ile Val Lys Gln Met Gln Ile Thr Pro Tyr Leu Leu His Ile Leu His
 50 55 60
 Asp Ala Thr Gln Arg Val Pro Glu Ile Val Asn Asp Gly Ser Tyr Gln
 65 70 75 80
 Gly His Leu Tyr Ala Met Tyr Leu Leu Ala Gln Phe Arg Glu Ser Arg
 85 90 95
 Ala Leu Pro Leu Ile Ile Lys Leu Phe Ala Phe Glu Asp Asp Thr Pro
 100 105 110
 His Ala Ile Ala Gly Asp Val Leu Thr Glu Asp Leu Pro Arg Ile Leu
 115 120 125
 Ala Ser Val Cys Asn Asp Asp Ser Leu Ile Lys Glu Leu Ile Glu Thr
 130 135 140
 Pro Lys Ile Asn Pro Tyr Val Lys Ala Ala Ala Ile Ser Gly Leu Val
 145 150 155 160
 Thr Leu Val Gly Ala Gly Lys Ile Pro Arg Asp Lys Val Ile Arg Xaa
 165 170 175
 Phe Ala Glu Leu Leu Asn Tyr Arg Leu Glu Lys Gln Pro Ser Phe Ala
 180 185 190
 Trp Asp Asn Leu Ile Ala Gly Ile Cys Thr Leu Tyr Pro Gly Glu Leu
 195 200 205
 Phe Tyr Pro Ile Ser Lys Ala Phe Asp Gly Gly Leu Val Asp Thr Ser
 210 215 220
 Phe Ile Ser Met Glu Asp Val Glu Asn Ile Ile His Glu Glu Thr Val
 225 230 235 240
 Glu Ser Cys Ile His Thr Leu Cys Ser Ser Thr Glu Leu Ile Asn Asp
 245 250 255
 Thr Leu Glu Glu Met Glu Lys Trp Leu Glu Asp Phe Pro Ile Glu Pro
 260 265 270
 <210>223
 <211>246

<212>PRT

<213>Chlamydia pneumoniae

<400>223

Val Asn Lys Lys Lys Arg Phe Leu Ser Leu Leu Phe Leu Thr Ala Val
 1 5 10 15
 Leu Leu Gly Ile Trp Phe Ser Pro His Pro Ala Ser Ile Asn Ser Asn
 20 25 30
 Ala Trp Gln Leu Phe Ala Ile Phe Thr Thr Thr Ile Met Gly Ile Ile
 35 40 45
 Phe Gln Pro Val Pro Met Gly Ala Ile Ala Ile Ile Gly Ile Ser Thr
 50 55 60
 Leu Leu Leu Thr Gln Thr Leu Thr Leu Glu Gln Gly Leu Ser Gly Phe
 65 70 75 80
 His Asn Pro Ile Ala Trp Leu Val Phe Leu Ser Phe Ser Ile Ala Lys
 85 90 95
 Gly Ile Ile Lys Thr Gly Leu Gly Glu Arg Ile Ala Tyr Phe Phe Val
 100 105 110
 Ser Ala Leu Gly Lys Ser Pro Leu Gly Leu Ser Tyr Gly Leu Val Ile
 115 120 125
 Thr Asp Phe Phe Leu Ala Pro Ala Ile Pro Ser Val Thr Ala Arg Ala
 130 135 140
 Gly Gly Ile Leu Tyr Pro Val Val Thr Ser Leu Ser Asp Ser Phe Gly
 145 150 155 160
 Ser Ser Ala Glu Lys Gly Thr Gln Asp Leu Ile Gly Ser Phe Leu Ile
 165 170 175
 Lys Val Ala Tyr Gln Ser Ser Val Ile Thr Ser Ala Met Phe Leu Thr
 180 185 190
 Ala Met Ala Gly Asn Pro Leu Val Ala Ala Leu Ala Gly His Val Gly
 195 200 205
 Val Ser Leu Ser Trp Val Leu Trp Ala Lys Ala Ala Ile Ile Pro Gly
 210 215 220
 Leu Leu Ser Leu Phe Leu Met Pro Ile Ile Leu Tyr Lys Leu Tyr Pro
 225 230 235 240
 Pro Lys Asn His Ile Leu
 245

<210>224

<211>123

<212>PRT

<213>Chlamydia pneumoniae

<400>224

Leu Ser Pro Arg Gly Leu Phe Pro Lys Ala Leu Thr Lys Lys Tyr Ala
 1 5 10 15
 Ile Arg Ser Pro Ser Pro Val Phe Met Ile Pro Phe Ala Ile Glu Lys
 20 25 30
 Glu Arg Lys Thr Asn His Ala Ile Gly Leu Trp Asn Pro Asp Asn Pro
 35 40 45
 Cys Ser Arg Val Asn Val Cys Val Ser Ser Ser Val Glu Ile Pro Ile
 50 55 60
 Met Ala Ile Ala Pro Met Gly Thr Gly Trp Lys Met Ile Pro Met Ile
 65 70 75 80
 Val Val Val Asn Ile Ala Lys Ser Cys Gln Ala Leu Glu Phe Ile Asp
 85 90 95
 Ala Gly Trp Gly Glu Asn Gln Met Pro Lys Ser Thr Ala Val Arg Lys
 100 105 110
 Arg Arg Asp Lys Lys Arg Phe Phe Leu Phe Thr
 115 120

<210>225

<211>550

<212>PRT

<213>Chlamydia pneumoniae

<400>225

Met His Pro Leu Tyr Val Asp Leu Asp Thr Ile Ile Ser Ser Tyr Ser
 1 5 10 15
 Pro Pro Leu Pro Lys Glu Phe Gln Glu Ala Ala Ser Leu Ile Ala Val

20 25 30
 Pro Asp Thr Ser His Ser Lys Pro Val Val Pro Gly Val Lys Thr Leu
 35 40 45
 Phe Pro Gln Thr Tyr His Leu Pro Tyr Leu Lys Phe Val Gln Gly Glu
 50 55 60
 Asn Val Val His Thr Pro Leu Lys Val Gly Val Met Phe Ser Gly Gly
 65 70 75 80
 Pro Ala Pro Gly Gly His Asn Val Ile Gln Gly Leu Phe Asn Ser Leu
 85 90 95
 Lys Asp Phe His Pro Asp Ser Ser Leu Val Gly Phe Val Asn Asn Gly
 100 105 110
 Asp Gly Leu Thr Asn Asn Lys Ser Ile Asp Ile Thr Glu Phe Leu
 115 120 125
 Ser Lys Phe Arg Asn Ser Gly Gly Phe Asn Cys Ile Gly Thr Gly Arg
 130 135 140
 Lys Lys Ile Val Thr Pro Glu Ala Lys Glu Ala Cys Leu Lys Thr Ala
 145 150 155 160
 Glu Ala Leu Asp Leu Asp Gly Leu Val Ile Ile Gly Gly Asp Gly Ser
 165 170 175
 Asn Thr Ala Thr Ala Ile Leu Ala Glu Tyr Phe Ala Lys Arg Arg Pro
 180 185 190
 Lys Thr Ser Ile Val Gly Val Pro Lys Thr Ile Asp Gly Asp Leu Gln
 195 200 205
 His Thr Phe Leu Asp Leu Ala Phe Gly Phe Asp Thr Ala Thr Lys Phe
 210 215 220
 Tyr Ser Ser Ile Ile Ser Asn Ile Ser Arg Asp Ala Leu Ser Cys Lys
 225 230 235 240
 Ala His Tyr His Phe Ile Lys Leu Met Gly Arg Ser Ala Ser His Ile
 245 250 255
 Ala Leu Glu Cys Ala Leu Gln Thr His Pro Asn Ile Ala Leu Ile Gly
 260 265 270
 Glu Glu Ile Ala Glu Lys Asn Leu Pro Leu Lys Thr Ile Ile His Lys
 275 280 285
 Ile Cys Ser Val Ile Ala Asp Arg Ala Ala Met Glu Lys Tyr Tyr Gly
 290 295 300
 Val Ile Leu Ile Pro Glu Gly Ile Ile Glu Phe Ile Pro Glu Ile Ile
 305 310 315 320
 Asn Leu Ile Thr Glu Ile Glu Ser Leu Ser Glu Tyr Glu Asp Lys Ile
 325 330 335
 Ser Arg Leu Ser Pro Glu Ser Gln Arg Leu Leu Lys Ser Phe Pro Ala
 340 345 350
 Pro Ile Ile Glu Gln Ile Leu Asn Asp Arg Asp Ala His Gly Asn Val
 355 360 365
 Tyr Val Ser Lys Ile Ser Val Asp Lys Leu Leu Ile His Leu Val Ser
 370 375 380
 Asn His Leu Gln Gln Tyr Phe Pro Asn Val Pro Phe Asn Ala Ile Ser
 385 390 395 400
 His Phe Leu Gly Tyr Glu Gly Arg Ser Gly Leu Pro Thr Lys Phe Asp
 405 410 415
 Asn Thr Tyr Gly Tyr Ser Leu Gly Tyr Gly Ala Gly Ile Leu Val Arg
 420 425 430
 Asn His Cys Asn Gly Tyr Leu Ser Thr Ile Glu Ser Leu Ala Cys Pro
 435 440 445
 Phe Met Lys Trp Lys Leu Arg Ala Ile Pro Val Val Lys Met Phe Thr
 450 455 460
 Val Lys Gln Gln Ala Asp Gly Thr Leu Gln Pro Lys Ile Lys Lys Tyr
 465 470 475 480
 Leu Val Asp Ile Gly Ser Thr Ala Phe Arg Lys Phe Lys Leu Tyr Arg
 485 490 495
 Lys Ile Trp Ala Leu Glu Asp Ser Tyr Arg Phe Leu Gly Pro Leu Gln
 500 505 510
 Ile Glu Thr Pro Pro Glu Met His Ser Asp Asn Phe Pro Pro Leu Thr
 515 520 525
 Leu Leu Leu Asn His Asn Phe Trp Gln Arg His Gln Gly Cys Ile Glu

530
 Ile Pro Asp Thr Thr Tyr
 545 550
 <210>226
 <211>322
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>226
 Tyr Gln Lys Leu Trp Glu Arg Glu Arg Glu Tyr Phe Lys Thr Ile Arg
 1 5 10 15
 Glu Lys Glu His Ala Thr Ile Ser Thr Met Leu Val Glu Leu Glu Ala
 20 25 30
 Leu Lys Arg Glu Phe Ala His Leu Lys Asp Gln Lys Pro Thr Ser Asp
 35 40 45
 Gln Glu Ile Thr Ser Leu Tyr Gln Cys Leu Asp His Leu Glu Phe Val
 50 55 60
 Leu Leu Gly Leu Gly Gln Asp Lys Phe Leu Lys Ala Thr Glu Asp Glu
 65 70 75 80
 Asp Val Leu Phe Glu Ser Gln Lys Ala Ile Asp Ala Trp Asn Ala Leu
 85 90 95
 Leu Thr Lys Ala Arg Asp Val Leu Gly Leu Gly Asp Ile Gly Ala Ile
 100 105 110
 Tyr Gln Thr Ile Glu Phe Leu Gly Ala Tyr Leu Ser Lys Val Asn Arg
 115 120 125
 Arg Ala Phe Cys Ile Ala Ser Glu Ile His Phe Leu Lys Thr Ala Ile
 130 135 140
 Arg Asp Leu Asn Ala Tyr Tyr Leu Leu Asp Phe Arg Trp Pro Leu Cys
 145 150 155 160
 Lys Ile Glu Glu Phe Val Asp Trp Gly Asn Asp Cys Val Glu Ile Ala
 165 170 175
 Lys Arg Lys Leu Cys Thr Phe Glu Lys Glu Thr Lys Glu Leu Asn Glu
 180 185 190
 Ser Leu Leu Arg Glu Glu His Ala Met Glu Lys Cys Ser Ile Gln Asp
 195 200 205
 Leu Gln Arg Lys Leu Ser Asp Ile Ile Ile Glu Leu His Asp Val Ser
 210 215 220
 Leu Phe Cys Phe Ser Lys Thr Pro Ser Gln Glu Glu Tyr Gln Lys Asp
 225 230 235 240
 Cys Leu Tyr Gln Ser Arg Leu Arg Tyr Leu Leu Leu Leu Tyr Glu Tyr
 245 250 255
 Thr Leu Leu Cys Lys Thr Ser Thr Asp Phe Gln Glu Gln Ala Arg Ala
 260 265 270
 Lys Glu Glu Phe Ile Arg Glu Lys Phe Ser Leu Leu Glu Leu Glu Lys
 275 280 285
 Gly Ile Lys Gln Thr Lys Glu Leu Glu Phe Ala Ile Ala Lys Ser Lys
 290 295 300
 Leu Glu Arg Gly Cys Leu Val Met Arg Lys Tyr Glu Xaa Pro Leu Asn
 305 310 315 320
 Ile Val
 <210>227
 <211>101
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>227
 Glu Cys Val Met Ser Tyr Pro Asp Ile Ser Asn Val Gln Ala Ser Ser
 1 5 10 15
 Ile Gln Ser Ala Leu Leu His Lys Thr Ser Asp Gln Ile Gln Gln Lys
 20 25 30
 Arg Cys Phe Lys Gln Ser Thr Phe Val Ile Leu Ala Val Ser Leu Val
 35 40 45
 Ile Ile Gly Ser Leu Phe Leu Leu Ala Gly Val Ala Ile Leu Thr Val
 50 55 60
 Phe Ser His Gly Val Leu Ser Leu Val Phe Gly Val Leu Gly Ile Val

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65 70 75 80
Leu Gly Leu Leu Leu Ala Gly Gly Val Gly Leu Leu Val Glu Glu
85 90 95
Ala Lys Ser Leu Leu
100
<210>228
<211>398
<212>PRT
<213>Chlamydia pneumoniae
<400>228
Glu Leu Ser Tyr Gly Val Val Val Ser Ile Tyr Ser Glu Ile Leu Ser
1 5 10 15
Phe Ser Glu Leu Thr Ser Cys Lys His Ser Leu Phe Pro Phe Gly Pro
20 25 30
Ile Glu Thr Ala Ser Ile Arg Ile His His Val Phe Asn Val Val Ile
35 40 45
Val Cys Leu Ile Ile Leu Gly Thr Leu Phe Val Cys Leu Gly Met Val
50 55 60
Phe Leu Gly Val Phe Ser Thr Tyr Leu Leu Gly Met Ser Ser Met Ile
65 70 75 80
Leu Gly Leu Leu Leu Ile Ser Ile Gly Leu Ala Leu Leu Lys Phe Lys
85 90 95
Glu Arg Tyr Gly Leu Glu Pro Lys Glu Leu Phe Gly Val Glu Gly Gly
100 105 110
Phe Asp Lys Lys Leu Pro Ser Glu Ile Ile Gln Met Gln Asp Gln Ile
115 120 125
Ala Asp Leu Ala Arg Glu Leu Asp Leu Glu Gln Lys Lys Asp Thr Leu
130 135 140
Ile Arg Gly Phe Ser Ala Arg Leu Asp Val Leu Glu Gly Ser Lys Thr
145 150 155 160
Glu Lys Lys Gln Ile Leu Lys Ile Gly Val Pro Arg Asn Leu Ser Glu
165 170 175
Ile Gln Glu Arg Ala Gln Glu Gln Asn Ser Ile Leu Glu Gln Cys Lys
180 185 190
Glu Ala Leu Leu Phe Arg Arg Lys Ser Ala Gln Glu Ile Phe Lys Lys
195 200 205
Leu Tyr Asp Arg Lys Ala Ala Phe Trp Arg Ser Tyr Arg Glu Asp Leu
210 215 220
Trp Cys Tyr Ser Glu Ile His Val Ser Lys Lys Ala Leu Ser Asn Leu
225 230 235 240
Tyr Ile Gly Asp Val Phe Glu Gly Thr Ala Pro His Phe Leu Met Glu
245 250 255
Ala Tyr Ala Met Cys Arg Thr Ala Lys Asn Leu Arg Asn Tyr Val Lys
260 265 270
Val Cys Val Glu Asp Met Arg Val Asn Glu Glu Lys Lys Arg Ala Lys
275 280 285
Gln Leu Ser Val Ser Glu Leu Leu Cys Cys Cys Thr Glu Ile Glu Thr
290 295 300
Asp Leu Glu Asn Glu Thr Asn Leu Phe Thr Ser Asp Ser Glu Asp Val
305 310 315 320
Leu Glu Glu Tyr Gln Ile His Cys Ile Arg Val Thr Met Leu His Ala
325 330 335
Leu Trp Ala Ile Tyr Asn Asp Glu Val Val Ser Arg Lys Pro Ile Asp
340 345 350
Thr Leu Asp Arg Val Arg Ala Arg Met Ala Val Glu Asp Cys Ile Glu
355 360 365
Thr Phe Glu Glu Leu Gln Met Cys Val Val His Thr Lys Thr Leu Glu
370 375 380
Leu Glu Ile Ala Gln Leu Tyr Val Asp Ile Leu Leu Glu Ala
385 390 395
<210>229
<211>413
<212>PRT
<213>Chlamydia pneumoniae

<400>229
 Arg Met Tyr Phe Ser His Val Ser Thr Val Val Val Val Ala Leu Phe
 1 5 10 15
 Ile Leu Gly Ile Phe Phe Leu Ser Gly Ser Leu Ala Phe Leu Val His
 20 25 30
 Thr Ser Cys Gly Val Leu Leu Gly Ala Ala Leu Pro Ile Leu Cys Ile
 35 40 45
 Gly Leu Val Leu Leu Ala Val Ala Leu Ile Val Phe Leu Cys His Lys
 50 55 60
 His Lys Thr Arg Gln Asp Leu Asp Tyr Tyr Asp Gln Asp Leu Asp Ser
 65 70 75 80
 Leu Val Ile His Lys Lys Glu Ile Pro Asn Asp Ile Ser Glu Leu Arg
 85 90 95
 Val Thr Phe Glu Lys Leu Gln Asn Leu Phe Gln Phe His Thr Lys Asp
 100 105 110
 Phe Ser Asp Leu Ser Gln Glu Leu Gln Gly Lys Phe Ile Asn Cys Met
 115 120 125
 Glu Lys Trp Leu Thr Leu Glu Asp Glu Val Thr Lys Phe Leu Ile Val
 130 135 140
 Arg Asp Arg Phe Leu Glu Thr Arg Arg Asn Phe Thr Thr Phe Gly Glu
 145 150 155 160
 Gln Val Lys Gly Ile Gln Ser Asn Ile Phe Asp Leu His Glu Glu Lys
 165 170 175
 Ser Ser Leu Tyr Leu Glu Leu Tyr Arg Leu Arg Lys Asp Leu Gln Val
 180 185 190
 Leu Leu Asn Phe Phe Leu Leu Pro Pro Gly Ile Leu Lys Val Asp Tyr
 195 200 205
 Asp Glu Ile Glu Ala Ile Lys Gly Leu Phe Ile Arg Leu Thr Ser Arg
 210 215 220
 Leu Asp Lys Leu Asp Val Lys Ala Gln Glu Arg Lys Lys Phe Ile Asn
 225 230 235 240
 Glu Met Ser Arg Glu Phe Lys Glu Val Glu Lys Ala Phe Asp Ile Val
 245 250 255
 Asp Arg Ala Thr Lys Lys Leu Met Asp Arg Ala Lys Lys Glu Ser Pro
 260 265 270
 Ala Arg Leu Phe Met Gly Arg Thr Glu Ser Leu Leu Glu Met Lys Lys
 275 280 285
 Asn Glu Glu Ala Leu Lys Asn Gln Gly Leu Asp Pro Glu Asn Leu Ser
 290 295 300
 His Pro Glu Leu Phe Ser Pro Tyr Gln Gln Leu Ile Leu Asn Tyr
 305 310 315 320
 Leu Asn Ser Glu Ile Val Leu His His Tyr Glu Phe Leu Ile Ser Gly
 325 330 335
 Thr Val Thr Ser Gly Leu Thr Leu Glu Glu Cys Glu Asn Arg Met Arg
 340 345 350
 Ala Ala Ser Thr Gly Leu Asn Ala Leu Leu Val Arg Lys Leu Gln Phe
 355 360 365
 Arg Gly Ala Ile Lys Ser Ala Tyr Phe Glu Lys Leu Thr Glu Ile Glu
 370 375 380
 Lys Glu Leu Arg Ser Leu Gln Asp Val Ile Xaa Ser Leu Glu Leu Glu
 385 390 395 400
 Leu Ile His Lys Ile Lys Asp Ile Val Thr Glu Glu Thr
 405 410

<210>230

<211>193

<212>PRT

<213>Chlamydia pneumoniae

<400>230

Ile Cys Phe Lys Arg Arg Lys Asp Arg Thr Gly Met Leu Ser Arg Gln
 1 5 10 15
 Lys Glu Ser Arg Glu Thr Gly Gly Val Ser Arg Ser Tyr Arg Arg Glu
 20 25 30
 Leu Leu Glu Val Leu Lys Thr Arg Leu Ser Val Glu Lys Glu Ile Gln
 35 40 45

Leu Phe Glu Glu Val Val Ser Ala Phe Glu Glu Lys Leu Ala Ser Leu
 50 55 60
 His Arg Thr Val Phe Ser Glu Glu Glu Leu Gln Glu Ala Leu Asp Lys
 65 70 75 80
 Ala Lys Ala Glu Leu Leu Asp Ile Gln Val Arg Lys Ser Val Val Glu
 85 90 95
 Asp Leu Ser Cys Glu Pro Thr Leu Ile Gln Tyr His Leu Leu Arg Leu
 100 105 110
 Tyr Glu Val Gln Cys Arg Ile Val Glu Gln Phe Leu Thr Gln Thr Phe
 115 120 125
 Ser Ser Glu Gln Glu Lys Val Leu Glu Glu Tyr Glu Ala Leu Lys Ala
 130 135 140
 Arg Ile Arg Lys Thr Leu Arg Val Lys Leu Asp Gln Val Arg Ala Asn
 145 150 155 160
 Val Ala Phe Val Ala Ser Thr Thr Asp Leu Leu Ser Glu Ser Glu Ser
 165 170 175
 Leu Asp Gly Asn Asp Ser Val Phe Glu Asp Ala His Asp Asp Phe Leu
 180 185 190
 Asp

<210>231

<211>267

<212>PRT

<213>Chlamydia pneumoniae

<400>231

Leu Thr Ser Ser Lys Lys Gln Val Met Ser Ser Ala Ile Ala Arg Asp
 1 5 10 15
 Cys Phe Pro Ser Pro Ser Pro Gln Pro Ser Ser Thr Leu Gly Val His
 20 25 30
 Pro Pro Lys Tyr Lys Ser Leu Ile Leu Ser Val Ser Leu Ile Val Leu
 35 40 45
 Gly Val Leu Leu Leu Cys Val Gly Met Leu Leu Leu Val Asn Ala Ile
 50 55 60
 Phe Ser Phe Ser Val Leu Thr Val Gly Leu Gly Gly Ala Gly Val Phe
 65 70 75 80
 Leu Gly Ser Leu Leu Ile Leu Gly Leu Ile Phe Phe Val Ser Tyr
 85 90 95
 His Arg Lys Leu Ser Glu Ala Thr Arg Ser Leu Glu Gln Lys Ile Thr
 100 105 110
 Leu Glu Tyr Gln Pro Trp Ala Asp Leu Arg Lys Glu Leu Asn Glu Val
 115 120 125
 Gln Glu Trp Ser Asn Phe Leu Leu Asp Glu Trp Glu Asp Phe Lys Glu
 130 135 140
 Val Val Ala Gln His Lys Ser Gln Phe Ala Thr Phe Glu Gly Asp Leu
 145 150 155 160
 Leu Leu Phe Gly Arg Glu Val Glu Lys Tyr Glu Thr Ile Trp Lys Glu
 165 170 175
 Leu Asp Gly Arg Asp Val Ala Leu Leu Thr Glu Leu Lys Asn Ile Trp
 180 185 190
 Gly Pro Leu Glu Phe Leu Arg Lys Lys Gly Asp Arg Leu Gln Cys Glu
 195 200 205
 Ile Asp Lys Leu Arg Lys Glu Val Met Lys Val Gly Lys Ser Gly Leu
 210 215 220
 Lys Leu Ala Cys Glu Leu Thr Lys Phe Lys Ser Ala Leu Lys Asp Val
 225 230 235 240
 Lys Ile Glu Gln Glu Cys Tyr Arg Asp Lys Arg Lys Val Glu Lys Leu
 245 250 255
 Glu Val Phe Pro Glu Val Ile Gly Gly Asn Tyr
 260 265

<210>232

<211>150

<212>PRT

<213>Chlamydia pneumoniae

<400>232

Asn Lys Ala Arg Thr Met Asn Pro Val Thr Phe Asp Arg Ile Gln Val
 1 5 10 15
 Asp Phe Ile Pro Glu Asp Thr Ser Leu Arg Ile Asn Ser Tyr Ile Val
 20 25 30
 Ala Gly Gly Leu Leu Ile Leu Gly Val Val Leu Ser Ile Leu Ser Val
 35 40 45
 Ile Cys Leu Asp Ile Gly Leu Val Gly Leu Ser Ala Gly Ala Ala Phe
 50 55 60
 Thr Leu Gly Leu Gly Cys Leu Ile Phe Ala Leu Phe Leu Phe Ser Phe
 65 70 75 80
 Ser Leu Ile Leu Leu Ser Gln Glu Lys Arg Val Pro Asp Val Leu
 85 90 95
 Ser Leu Tyr Leu Glu Lys Glu Val Pro Gln Tyr Glu Thr Pro Leu Tyr
 100 105 110
 Lys Glu Asp Leu Glu Ser Glu Arg Asp Met Ser Ala Ile Ser Glu Arg
 115 120 125
 Leu Gly Ile Ile Glu Glu Lys Leu Arg Ile Ala Glu Lys Phe Arg Tyr
 130 135 140
 Ser Asp Ser Val Phe Val
 145 150
 <210>233
 <211>375
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>233
 Gly Ser Ser Leu Ala Leu Lys Phe His Leu Ile His Gln Ser Lys Lys
 1 5 10 15
 Ser Gln Ala Arg Val Gly Gln Ile Glu Thr Ser His Gly Val Ile Asp
 20 25 30
 Thr Pro Ala Phe Val Pro Val Ala Thr His Gly Ala Leu Lys Gly Val
 35 40 45
 Ile Asp His Ser Asp Ile Pro Leu Leu Phe Cys Asn Thr Tyr His Leu
 50 55 60
 Leu Leu His Pro Gly Pro Glu Ala Val Ala Lys Leu Gly Gly Leu His
 65 70 75 80
 Gln Phe Met Gly Arg Gln Ala Pro Ile Ile Thr Asp Ser Gly Gly Phe
 85 90 95
 Gln Ile Phe Ser Leu Ala Tyr Gly Ser Val Ala Glu Glu Ile Lys Ser
 100 105 110
 Cys Gly Lys Lys Lys Gly Met Ser Ser Leu Val Lys Ile Thr Asp Glu
 115 120 125
 Gly Ala Trp Phe Lys Ser Tyr Arg Asp Gly Arg Lys Leu Phe Leu Ser
 130 135 140
 Pro Glu Leu Ser Val Gln Ala Gln Lys Asp Leu Gly Ala Asp Ile Ile
 145 150 155 160
 Ile Pro Leu Asp Glu Leu Leu Pro Phe His Thr Asp Gln Glu Tyr Phe
 165 170 175
 Leu Thr Ser Cys Ser Arg Thr Tyr Val Trp Glu Lys Arg Ser Leu Glu
 180 185 190
 Tyr His Arg Lys Asp Pro Arg His Gln Ser Met Tyr Gly Val Ile His
 195 200 205
 Gly Gly Leu Asp Pro Glu Gln Arg Arg Ile Gly Val Arg Phe Val Glu
 210 215 220
 Asp Glu Pro Phe Asp Gly Ser Ala Ile Gly Gly Ser Leu Gly Arg Asn
 225 230 235 240
 Leu Gln Glu Met Ser Glu Val Val Lys Ile Thr Thr Ser Phe Leu Ser
 245 250 255
 Lys Glu Arg Pro Val His Leu Leu Gly Ile Gly Asp Leu Pro Ser Ile
 260 265 270
 Tyr Ala Met Val Gly Phe Gly Ile Asp Ser Phe Asp Ser Ser Tyr Pro
 275 280 285
 Thr Lys Ala Ala Arg His Gly Leu Ile Leu Ser Lys Ala Gly Pro Ile
 290 295 300
 Lys Ile Gly Gln Gln Lys Tyr Ser Gln Asp Ser Ser Thr Ile Asp Pro

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494

Ile Leu Gly Asn Ile Leu Gly Ala Gly Arg Leu Tyr Ser Val Trp Tyr
 65 70 75 80
 Thr Ser Asp Glu Asp Trp Lys Lys Gln Val Val
 85 90

<210>237

<211>100

<212>PRT

<213>Chlamydia pneumoniae

<400>237

Arg Gly Met Leu Pro Ala Trp Val Thr Pro Gly Phe Leu Thr Lys Leu
 1 5 10 15
 Ala Glu Gly Leu Lys Ile Asn Ser Gly Arg Ser Val Asn Pro Lys Gly
 20 25 30
 Leu Glu Gln Cys Ile Ala Ser Gly Gln Tyr Asn Glu Gln Ile Lys Lys
 35 40 45
 Asn Asn Leu Tyr Gly Ser Gln Val Leu Gly Gly Gln Leu Ala Thr Pro
 50 55 60
 Thr Ala Val Val Gly Asp Tyr Leu Ile Glu Asp Pro Thr Phe His Glu
 65 70 75 80
 Ile Glu Arg Ala Ile Gln His Ile Arg Gln Leu Gln Ala Val Glu Gly
 85 90 95
 Asp His Asp Asp
 100

<210>238

<211>140

<212>PRT

<213>Chlamydia pneumoniae

<400>238

Gln Ile Leu Phe Thr Ser Pro Leu Asn Lys Lys Xaa Leu Val Leu Cys
 1 5 10 15
 Thr Ala Met Phe Phe Ile Val Cys Phe Gly Phe Leu Ile His Lys Lys
 20 25 30
 His Thr Ile Leu Pro Pro Lys Ala His Ile Pro Thr Asn Ala Lys His
 35 40 45
 Phe Pro Thr Ile Gly Asn Pro Tyr Ala Pro Ile Asn Ile Thr Val Phe
 50 55 60
 Glu Glu Pro Ser Cys Ser Ala Cys Ala Glu Phe Thr Thr Glu Val Phe
 65 70 75 80
 Pro Leu Leu Lys Lys His Tyr Ile Asp Thr Gly Glu Ile Ser Phe Thr
 85 90 95
 Leu Ile Pro Val Cys Phe Ile Arg Gly Ser Lys Pro Ala Ala Gln Ala
 100 105 110
 Leu Leu Cys Ile Tyr His His Asp Ser Thr Ser Gly Arg Tyr Arg Arg
 115 120 125
 Leu Tyr Gly Ile Phe Pro Ser Tyr Phe Asp Leu Ser
 130 135 140

<210>239

<211>154

<212>PRT

<213>Chlamydia pneumoniae

<400>239

Leu Phe Thr Tyr Phe Leu Ser Tyr Cys Phe Pro Asn Gln Thr Phe Ser
 1 5 10 15
 Ser Leu Val Arg Ser Pro Thr Arg His Leu Gly Tyr Pro Phe Arg Leu
 20 25 30
 Arg Cys Arg Arg Ser Pro Thr Ile Phe Ala Asn Asp Thr Leu Ile Gly
 35 40 45
 Phe Ala Ile Leu Ala Val Val Cys Ile Ser Pro Thr Arg Pro Glu Ala
 50 55 60
 Leu Glu Val Gly Pro Thr Leu Pro Glu Gly Phe Ser Tyr Asn Pro Ser
 65 70 75 80
 Ala Gly Gly Arg Arg Ala Ala Val Leu Phe Leu Ser Leu Leu Gly Trp
 85 90 95
 Leu Glu Ala Arg Tyr Leu Thr Ala Ser Ser Leu Gly Ile Thr Ser Ser

100 105 110
 Gln Ser Ser Asn Phe Leu Leu Leu Tyr Ser Ser Ile Met Thr Val Tyr
 115 120 125
 Ser Leu Leu Val Val Leu Ser Leu Ala Gly Ser Glu Arg Arg Trp His
 130 135 140
 Thr Arg Pro Lys Ile Val Ile Ala Thr Ala
 145 150
 <210>240
 <211>94
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>240
 Leu Leu Ala Met Leu Cys Leu Thr Ile Glu Pro Ala Leu Ala Val Val
 1 5 10 15
 Phe Ala Tyr Asp Glu Thr Arg Ala Thr Leu Arg Tyr Ile Ser Gln Phe
 20 25 30
 Leu Gly Asp Lys Arg Ala Leu Thr Arg Ala Ser Phe Phe Gly Ser Glu
 35 40 45
 Tyr Tyr Lys His Thr Leu Ser Trp Glu Glu Arg Thr Val Arg Pro Leu
 50 55 60
 Arg Lys Ala Tyr Lys Gln Ala Phe Glu Gly Ile Ser Phe Pro Ile Asn
 65 70 75 80
 Gln Leu Leu Ala Ile Leu Val Ala Ser Phe Cys Lys Ser Gln
 85 90
 <210>241
 <211>234
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>241
 Arg Phe Lys Lys Ala Leu Ile Tyr Met Ser Ser Gln Pro Leu Val Thr
 1 5 10 15
 Thr Ser Ser Ser Leu Ser Arg Tyr Val Val Leu Thr Gly Glu Glu Lys
 20 25 30
 Val Ala Cys Tyr Lys Lys Ala Phe Asn His Ile Trp His Gly Ala Pro
 35 40 45
 Ala Ile Ile Leu Ala Ala Ala Leu Leu Met Phe Cys Ile Phe Gly Phe
 50 55 60
 Val Leu Gly Ser Ile Leu Leu Gly Ala Pro Leu Glu Gly Ala Ser Ile
 65 70 75 80
 Leu Tyr Asp Val Ile Leu Pro Trp Leu Leu Pro Ser Ile Leu Val Phe
 85 90 95
 Val Leu Leu Val Leu Pro Leu Asn Ile Tyr Ala Tyr Ser His His Lys
 100 105 110
 Gln Val Leu Ala Leu His Glu Arg Ile Thr Gln Ser Asn Tyr Lys Glu
 115 120 125
 Ile Tyr Asp His Cys Glu Lys Glu Lys Lys Thr Pro Asn Lys Lys Ala
 130 135 140
 Leu Ser Leu Tyr Ile Glu Ser Gln Val Leu Val Pro Glu Tyr Ser Lys
 145 150 155 160
 Arg Phe Ser Ser Met Ile Leu Gly Lys Thr Leu Lys Ile Ile Pro Lys
 165 170 175
 Lys Asp Ser Pro Glu Ser Leu Lys His Asp Glu Leu Ile Gln Lys Ala
 180 185 190
 Leu Glu Arg Ala Lys Glu Asn Ile Tyr Met Asn Lys Asn Gln Arg Glu
 195 200 205
 Lys Arg Asp Glu Arg Glu Ala Lys Lys Glu Ala Lys Asn Ala Ser Lys
 210 215 220
 Thr Asn Pro Leu Trp Glu Gly Leu Gly Thr
 225 230
 <210>242
 <211>235
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>242

Met Leu Gln Ala His Arg Leu Cys Tyr Ser Cys Asp Asn Gln Val Ile
 1 5 10 15
 Leu Lys Asp Ala Ser Phe Gln Ala Ser Pro Gly Thr Ile Thr Ile Ile
 20 25 30
 Leu Gly Ser Ser Gly Val Gly Lys Thr Thr Leu Phe Arg Leu Leu Ala
 35 40 45
 Gly Phe Leu Pro Leu Gln Glu Gly Glu Leu Leu Trp Asn Gly Ser Pro
 50 55 60
 Leu Asn Arg Lys Asp Val Ala Tyr Met Gln Gln Lys Glu Ala Leu Leu
 65 70 75 80
 Pro Trp Arg Thr Ala Leu Lys Asn Met Thr Leu Ser Thr Glu Leu Gly
 85 90 95
 Ile Asn Thr Ser His Asn Ala Leu Ser Asn Glu Arg Leu Glu Glu Ile
 100 105 110
 Ile His Asn Phe Asp Leu Gly Gln Leu Leu Asp Arg Tyr Pro Asp Glu
 115 120 125
 Leu Ser Gly Gly Gln Arg Gln Arg Ile Ala Leu Ala Ala Gln Cys Leu
 130 135 140
 Ser Leu Lys Pro Ile Leu Leu Leu Asp Glu Pro Phe Ser Ser Leu Asp
 145 150 155 160
 Val Leu Leu Lys Glu Gln Leu Tyr Gln Asp Ile Val Ala Leu Ala Lys
 165 170 175
 Lys Glu Asn Lys Thr Val Leu Leu Val Thr His Asp Phe His Asp Val
 180 185 190
 Ser Cys Leu Gly Asp Val Leu Tyr Val Ile Lys Asn Lys Thr Leu Thr
 195 200 205
 Pro Val Pro Leu Asp Pro Ser Met Arg Pro Leu Asn Asn Gly Leu Cys
 210 215 220
 Phe Ile Lys Asp Leu Lys Lys His Leu Tyr Thr
 225 230 235

<210>243

<211>301

<212>PRT

<213>Chlamydia pneumoniae

<400>243

Lys Lys Phe Leu Met Arg Arg Phe Leu Phe Leu Ile Leu Ser Ser Leu
 1 5 10 15
 Pro Leu Val Ala Phe Ser Ala Asp Asn Phe Thr Ile Leu Glu Glu Lys
 20 25 30
 Gln Ser Pro Leu Ser Arg Val Ser Ile Ile Phe Ala Leu Pro Gly Val
 35 40 45
 Thr Pro Val Ser Phe Asp Gly Asn Cys Ser Ile Pro Trp Phe Ser His
 50 55 60
 Ser Lys Lys Thr Leu Glu Gly Gln Arg Ile Tyr Ser Gly Asp Ser
 65 70 75 80
 Phe Gly Lys Tyr Phe Val Val Ser Ala Leu Trp Pro Asn Lys Val Ser
 85 90 95
 Ser Ala Val Val Ala Cys Asn Met Ile Leu Lys His Arg Val Asp Leu
 100 105 110
 Ile Leu Ile Ile Gly Ser Cys Tyr Ser Arg Ser Gln Asp Ser Arg Phe
 115 120 125
 Gly Ser Val Leu Val Ser Lys Gly Tyr Ile Asn Tyr Asp Ala Asp Val
 130 135 140
 Arg Pro Phe Phe Glu Arg Phe Glu Ile Pro Asp Ile Lys Lys Ser Val
 145 150 155 160
 Phe Ala Thr Ser Glu Val His Arg Glu Ala Ile Leu Arg Gly Gly Glu
 165 170 175
 Glu Phe Ile Ser Thr His Lys Gln Glu Ile Glu Glu Leu Leu Lys Thr
 180 185 190
 His Gly Tyr Leu Lys Ser Thr Thr Lys Thr Glu His Thr Leu Met Glu
 195 200 205
 Gly Leu Val Ala Thr Gly Glu Ser Phe Ala Met Ser Arg Asn Tyr Phe
 210 215 220
 Leu Ser Leu Gln Lys Leu Tyr Pro Glu Ile His Gly Phe Asp Ser Val

225 230 235 240
 Ser Gly Ala Val Ser Gln Val Cys Tyr Glu Tyr Ser Ile Pro Cys Leu
 245 250 255
 Gly Val Asn Ile Leu Leu Pro His Pro Leu Glu Ser Arg Ser Asn Glu
 260 265 270
 Asp Trp Lys His Leu Gln Ser Glu Ala Ser Lys Ile Tyr Met Asp Thr
 275 280 285
 Leu Leu Lys Ser Val Leu Lys Glu Leu Cys Ser Ser His
 290 295 300
 <210>244
 <211>233
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>244
 Phe Ile Met Leu Gln Ser Cys Lys Lys Ala Leu Leu Ser Ile Val Val
 1 5 10 15
 Ser Ile Leu Ala Phe His Pro Ile Pro Gly Met Gly Val Glu Ala Lys
 20 25 30
 Ser Gly Phe Leu Gly Lys Val Lys Gly Trp Phe Ser Lys Lys Glu Ile
 35 40 45
 Gln Glu Glu Ala Arg Ile Leu Pro Val Lys Asp Ser Leu Ser Trp Lys
 50 55 60
 Arg Tyr Asp Tyr Thr Ser Ser Ser Gly Phe Ser Val Glu Phe Pro Gly
 65 70 75 80
 Glu Pro Asp His Ser Gly Gln Ile Val Glu Val Pro Gln Ser Glu Ile
 85 90 95
 Thr Ile Arg Tyr Asp Thr Tyr Val Thr Glu Thr His Pro Asp Asn Thr
 100 105 110
 Val Tyr Val Val Ser Val Trp Glu Tyr Pro Glu Lys Val Asp Ile Ser
 115 120 125
 Arg Pro Glu Leu Asn Leu Gln Glu Gly Phe Ser Gly Met Met Gln Ala
 130 135 140
 Leu Pro Glu Ser Gln Val Leu Phe Met Gln Ala Arg Gln Ile Gln Gly
 145 150 155 160
 His Lys Ala Leu Glu Phe Trp Ile Val Cys Glu Asp Val Tyr Phe Arg
 165 170 175
 Gly Met Leu Ile Ser Val Asn His Thr Leu Tyr Gln Val Phe Met Val
 180 185 190
 Tyr Lys Asn Lys Asn Pro Gln Ala Leu Asp Lys Glu Tyr Glu Ala Phe
 195 200 205
 Ser Gln Ser Phe Lys Ile Thr Lys Ile Arg Glu Pro Arg Thr Ile Pro
 210 215 220
 Ser Ser Val Lys Lys Lys Val Ser Leu
 225 230
 <210>245
 <211>210
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>245
 Val Phe Val Arg Tyr Leu Leu Met Lys Pro Glu Glu Ser Glu Cys Leu
 1 5 10 15
 Cys Ile Gly Val Leu Pro Ala Arg Trp Asn Ser Ser Arg Tyr Pro Gly
 20 25 30
 Lys Pro Leu Ala Lys Ile His Gly Lys Ser Leu Ile Gln Arg Thr Tyr
 35 40 45
 Glu Asn Ala Ser Gln Ser Ser Leu Leu Asp Lys Ile Val Val Ala Thr
 50 55 60
 Asp Asp Gln His Ile Ile Asp His Val Thr Asp Phe Gly Gly Tyr Ala
 65 70 75 80
 Val Met Thr Ser Pro Thr Cys Ser Asn Gly Thr Glu Arg Thr Gly Glu
 85 90 95
 Val Ala Arg Lys Tyr Phe Pro Lys Ala Glu Ile Ile Val Asn Ile Gln
 100 105 110
 Gly Asp Glu Pro Cys Leu Asn Ser Glu Val Val Asp Ala Leu Val Gln

115 120 125
 Lys Leu Arg Ser Ser Pro Glu Ala Glu Leu Val Thr Pro Val Ala Leu
 130 135 140
 Thr Thr Asp Arg Glu Glu Ile Leu Thr Glu Lys Lys Val Lys Cys Val
 145 150 155 160
 Phe Asp Ser Glu Gly Arg Ala Leu Tyr Phe Ser Arg Ser Pro Ile Pro
 165 170 175
 Phe Ile Leu Lys Lys Ala Thr Pro Val Tyr Leu His Ile Gly Val Tyr
 180 185 190
 Ala Phe Lys Arg Glu Ala Leu Phe Arg Tyr Leu Thr Ala Xaa Leu Xaa
 195 200 205
 Ser Ser
 210
 <210>246
 <211>537
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>246
 Met Pro Phe Lys Cys Ile Phe Leu Thr Gly Gly Val Val Ser Ser Leu
 1 5 10 15
 Gly Lys Gly Leu Thr Ala Ala Ser Leu Ala Leu Ile Leu Glu Arg Gln
 20 25 30
 Arg Leu Asn Val Ala Met Leu Lys Leu Asp Pro Tyr Leu Asn Val Asp
 35 40 45
 Pro Gly Thr Met Asn Pro Phe Glu His Gly Glu Ile Tyr Val Thr Asp
 50 55 60
 Asp Gly Val Glu Thr Asp Leu Asp Leu Gly His Tyr His Arg Phe Ser
 65 70 75 80
 Ser Ala Ala Leu Ser Arg His Ser Ser Ala Thr Ser Gly Gln Ile Tyr
 85 90 95
 Ala Arg Val Ile Lys Arg Glu Arg Glu Gly Asp Tyr Leu Gly Ser Thr
 100 105 110
 Val Gln Val Ile Pro His Ile Thr Asn Glu Ile Ile Gln Val Ile Leu
 115 120 125
 Asp Ala Ala Lys Glu His Ser Pro Asp Val Leu Ile Val Glu Ile Gly
 130 135 140
 Gly Thr Ile Gly Asp Ile Glu Ser Leu Pro Phe Leu Glu Ala Ile Arg
 145 150 155 160
 Gln Phe Arg Tyr Asp His Ser Glu Asp Cys Leu Asn Ile His Met Thr
 165 170 175
 Tyr Val Pro Tyr Leu Gln Ala Ala Asp Glu Val Lys Ser Lys Pro Thr
 180 185 190
 Gln His Ser Val Gln Thr Leu Arg Gly Ile Gly Ile Ile Pro Asp Ala
 195 200 205
 Ile Leu Cys Arg Ser Glu Lys Pro Leu Thr Gln Glu Val Lys Ser Lys
 210 215 220
 Ile Ser Leu Phe Cys Asn Val Pro Asn Arg Ala Val Phe Asn Val Ile
 225 230 235 240
 Asp Val Lys His Thr Ile Tyr Glu Met Pro Leu Met Leu Ala Gln Glu
 245 250 255
 Lys Ile Ala Asn Phe Ile Gly Glu Lys Leu Lys Leu Ala Thr Val Pro
 260 265 270
 Glu Asn Leu Asp Asp Trp Arg Val Leu Val Asn Gln Leu Ser Gln Asp
 275 280 285
 Leu Pro Lys Val Lys Ile Gly Val Val Gly Lys Tyr Val Gln His Arg
 290 295 300
 Asp Ala Tyr Lys Ser Ile Phe Glu Ala Leu Thr His Ala Ala Leu Arg
 305 310 315 320
 Leu Gly His Ala Ala Glu Ile Ile Pro Ile Asp Ala Glu Asp Glu Asn
 325 330 335
 Leu Thr Met Glu Leu Ser Gln Cys Asp Ala Cys Leu Val Pro Gly Gly
 340 345 350
 Phe Gly Val Arg Gly Trp Glu Gly Lys Ile Ala Ala Ala Lys Phe Cys
 355 360 365

Arg Glu Gln Gly Ile Pro Tyr Phe Gly Ile Cys Leu Gly Met Gln Val
 370 375 380
 Leu Val Val Glu Tyr Ala Arg Asn Val Leu Asn Leu Asp Gln Ala Asn
 385 390 395 400
 Ser Leu Glu Met Asp Pro Asn Thr Pro His Pro Ile Val Tyr Val Met
 405 410 415
 Glu Gly Gln Asp Pro Leu Val Ala Thr Gly Gly Thr Met Arg Leu Gly
 420 425 430
 Ala Tyr Pro Cys Leu Leu Lys Pro Gly Ser Lys Ala His Lys Ala Tyr
 435 440 445
 Asn Glu Ser Ser Leu Ile Gln Glu Arg His Arg His Arg Tyr Glu Val
 450 455 460
 Asn Pro Asp Tyr Ile Gln Ser Leu Glu Asp His Gly Leu Arg Ile Val
 465 470 475 480
 Gly Thr Cys Pro Pro Gln Gly Leu Cys Glu Ile Ile Glu Val Ser Asp
 485 490 495
 His Pro Trp Met Ile Gly Val Gln Phe His Pro Glu Phe Val Ser Lys
 500 505 510
 Leu Ile Ser Pro His Pro Leu Phe Ile Ala Phe Ile Glu Ala Ala Leu
 515 520 525
 Val Tyr Ser Lys Asp Ala Ser His Val
 530 535

<210>247

<211>154

<212>PRT

<213>Chlamydia pneumoniae

<400>247

Met Gln Ala Met Ser Lys Pro Ser Ser Cys Lys Ala Tyr Leu Gly Ile
 1 5 10 15
 Asp Tyr Gly Lys Lys Arg Ile Gly Leu Ala Tyr Ala Ala Glu Pro Leu
 20 25 30
 Leu Leu Thr Leu Pro Ile Gly Asn Ile Glu Ala Gly Lys Asn Leu Lys
 35 40 45
 Leu Ser Ala Glu Ala Leu His Lys Ile Ile Leu Ser Arg Asn Ile Thr
 50 55 60
 Cys Val Val Leu Gly Asn Pro Leu Pro Met Gln Lys Gly Leu Tyr Ser
 65 70 75 80
 Ser Leu Gln Glu Glu Val Ser Leu Leu Ala Glu Glu Leu Lys Lys Leu
 85 90 95
 Ser Thr Val Glu Ile Ile Leu Trp Asp Glu Arg Leu Ser Ser Val Gln
 100 105 110
 Ala Glu Arg Met Leu Lys Gln Asp Cys Gly Leu Ser Arg Lys Asp Arg
 115 120 125
 Lys Gly Lys Thr Asp Ser Leu Ala Ala Thr Leu Ile Leu Thr Ser Phe
 130 135 140
 Leu Asp Ser Leu Pro Lys Lys Leu Thr Leu
 145 150

<210>248

<211>390

<212>PRT

<213>Chlamydia pneumoniae

<400>248

Met Thr Asn Val Val Gln Glu Thr Ile Gly Gly Leu Asn Ser Pro Arg
 1 5 10 15
 Thr Cys Pro Pro Cys Ile Leu Val Ile Phe Gly Ala Thr Gly Asp Leu
 20 25 30
 Thr Ala Arg Lys Leu Leu Pro Ala Leu Tyr His Leu Thr Lys Glu Gly
 35 40 45
 Arg Leu Ser Asp Gln Phe Val Cys Val Gly Phe Ala Arg Arg Glu Lys
 50 55 60
 Ser Asn Glu Leu Phe Arg Gln Glu Met Lys Gln Ala Val Ile Gln Phe
 65 70 75 80
 Ser Pro Ser Glu Leu Asp Ile Lys Val Trp Glu Asp Phe Gln Gln Arg
 85 90 95

Leu Phe Tyr His Arg Ser Glu Phe Asp Asn Asn Met Gly Tyr Thr Ser
 100 105 110
 Leu Lys Asp Ser Leu Glu Asp Leu Asp Lys Thr Tyr Gly Thr Arg Gly
 115 120 125
 Asn Arg Leu Phe Tyr Leu Ser Thr Pro Pro Gln Tyr Phe Ser Arg Ile
 130 135 140
 Ile Glu Asn Leu Asn Lys His Lys Leu Phe Tyr Lys Asn Gln Asp Gln
 145 150 155 160
 Gly Lys Pro Trp Ser Arg Val Ile Ile Glu Lys Pro Phe Gly Arg Asp
 165 170 175
 Leu Asp Ser Ala Lys Gln Leu Gln Gln Cys Ile Asn Glu Asn Leu Asn
 180 185 190
 Glu Asn Ser Val Tyr His Ile Asp His Tyr Leu Gly Lys Glu Thr Val
 195 200 205
 Gln Asn Ile Leu Thr Thr Arg Phe Ala Asn Thr Ile Phe Glu Ser Cys
 210 215 220
 Trp Asn Ser Gln Tyr Ile Asp His Val Gln Ile Ser Leu Ser Glu Thr
 225 230 235 240
 Ile Gly Ile Gly Ser Arg Gly Asn Phe Phe Glu Lys Ser Gly Met Leu
 245 250 255
 Arg Asp Met Val Gln Asn His Met Met Gln Leu Leu Cys Leu Leu Thr
 260 265 270
 Met Glu Pro Thr Thr Phe Asp Ala Asp Glu Ile Arg Lys Xaa Lys
 275 280 285
 Ile Lys Ile Leu Gln Arg Ile Ser Pro Phe Ser Glu Gly Ser Ser Ile
 290 295 300
 Val Arg Gly Gln Tyr Gly Pro Gly Thr Val Gln Gly Val Ser Val Leu
 305 310 315 320
 Gly Tyr Arg Glu Glu Glu Asn Val Asp Lys Asp Ser Arg Val Glu Thr
 325 330 335
 Tyr Val Ala Leu Lys Gln Ser Leu Ile Ile Pro Val Gly Leu Glu Phe
 340 345 350
 Leu Ser Ile Tyr Val Gln Glu Asn Asp Ser Pro Lys Asn Leu Gln Thr
 355 360 365
 Phe Leu Leu Phe Leu Lys Asn His Pro Thr Ile Tyr Leu Gln Pro Lys
 370 375 380
 Asn Val His Val Val Arg
 385 390

<210>249

<211>132

<212>PRT

<213>Chlamydia pneumoniae

<400>249

Gln Arg Phe Pro Ser Arg Asp Leu Arg Ser Phe Lys Thr Val Ile Asn
 1 5 10 15
 Asn Pro Arg Trp Leu Gly Val Pro Phe Tyr Leu Arg Ala Gly Lys Arg
 20 25 30
 Leu Ala Lys Lys Ser Thr Asp Ile Ser Ile Ile Phe Lys Lys Ser Pro
 35 40 45
 Tyr Asn Leu Phe Ala Ala Glu Glu Cys Ser Arg Cys Pro Ile Glu Asn
 50 55 60
 Asp Leu Leu Ile Ile Arg Ile Gln Pro Asp Glu Gly Val Ala Leu Lys
 65 70 75 80
 Phe Asn Cys Lys Val Pro Gly Thr Asn Asn Ile Val Arg Pro Val Lys
 85 90 95
 Met Asp Phe Arg Tyr Asp Ser Tyr Phe Gln Thr Thr Thr Pro Glu Ala
 100 105 110
 Tyr Glu Arg Leu Leu Cys Asp Cys Ile Ile Gly Asp Arg Thr Phe Ile
 115 120 125
 Tyr Gly Gly Gly
 130

<210>250

<211>266

<212>PRT

<213>Chlamydia pneumoniae

<400>250

Met Thr Asn Ile Gly Ile Glu Thr Met Ala Thr Leu Ile Asn Phe Asn
 1 5 10 15
 Asp Thr Asn Lys Leu Leu Thr Lys Gln Pro Ser Leu Phe Ile Asp
 20 25 30
 Leu Ala Ser Lys Asp Trp Ile Ala Ser Ala Asn Gln Ala Ile Lys Gln
 35 40 45
 Arg Gly Ala Phe Tyr Val Ala Leu Ser Gly Gly Lys Thr Pro Leu Glu
 50 55 60
 Ile Tyr Lys Asp Ile Val Ile Asn Lys Asp Lys Leu Ile Asp Pro Ser
 65 70 75 80
 Lys Ile Phe Leu Phe Trp Gly Asp Glu Arg Leu Ala Pro Ile Thr Ser
 85 90 95
 Ser Glu Ser Asn Tyr Gly Gln Ala Met Ser Ile Leu Arg Asp Leu Asn
 100 105 110
 Ile Pro Asp Glu Gln Ile Phe Arg Met Glu Thr Glu Asn Pro Asp Gly
 115 120 125
 Ala Lys Lys Tyr Gln Glu Leu Ile Glu Asn Lys Ile Pro Asp Ala Ser
 130 135 140
 Phe Asp Met Ile Met Leu Gly Leu Gly Glu Asp Gly His Thr Leu Ser
 145 150 155 160
 Leu Phe Ser Asn Thr Ser Ala Leu Glu Glu Glu Asn Asp Leu Val Val
 165 170 175
 Phe Asn Ser Val Pro His Leu Glu Thr Glu Arg Met Thr Leu Thr Phe
 180 185 190
 Pro Cys Val His Lys Gly Lys His Val Val Val Tyr Val Gln Gly Glu
 195 200 205
 Asn Lys Lys Pro Ile Leu Lys Ser Val Phe Phe Ser Glu Gly Arg Glu
 210 215 220
 Glu Lys Leu Tyr Pro Ile Glu Arg Val Gly Arg Asp Arg Ser Pro Leu
 225 230 235 240
 Phe Trp Ile Ile Ser Pro Glu Ser Tyr Asp Ile Ala Asp Phe Asp Asn
 245 250 255
 Ile Ser Ser Ile Tyr Lys Met Asp Ile Leu
 260 265

<210>251

<211>194

<212>PRT

<213>Chlamydia pneumoniae

<400>251

Leu Asn Ser Phe Phe Ser Phe Asn Ser Leu Asn Ser Trp His Cys Leu
 1 5 10 15
 Ser Ile Ile Phe Cys Ser Ser Trp Ser Cys Ser Arg Asn Tyr Cys Gly
 20 25 30
 Asn Asp Gly Val Cys Ala Ala Gly Gly Gly Ala Leu Leu Ile Ser Leu
 35 40 45
 Leu Gly Leu Trp Ile Ala Ile Val Arg Lys Ala Lys His Gln Glu Ala
 50 55 60
 Cys Val Gly His Leu Thr Asn Val Val Leu His Thr Ala Val Ser Glu
 65 70 75 80
 Ala Leu Leu His Asp Pro Ser His Phe Gln Thr Asn Ala Leu Ala Arg
 85 90 95
 Asp Leu Phe Leu Thr Asp Cys Leu Ser His Tyr Gly His Leu Phe Ser
 100 105 110
 Asn Glu Glu Val Ala Gln Leu Val Gln Gly Gly Ala Pro Gly Gly Gly
 115 120 125
 Ser Arg Pro Ser Gln His Tyr Gly Gly Ser Ser Asp Tyr Gln Asn Arg
 130 135 140
 Arg Gly Gly Asn Gly Asn Phe Gly Gly Ser His Phe Gly Gly Gly Gly
 145 150 155 160
 Gly Phe Ala Gly Ser His Phe Gly Ala Gly Tyr Pro Thr Ala Pro Thr
 165 170 175
 Met Pro Ser Ala Pro Pro Phe Pro Pro Ala Tyr Asp Thr Ile

Tyr Gly 180 185 190
 <210>252
 <211>167
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>252
 Xaa Ala Gln Asn Leu Gly Asn Leu Phe Asn Ser Phe Gly Ile Leu Ile
 1 5 10 15
 Met Cys Phe Ser Gln Cys Lys Ser Cys Gln Thr Pro Glu Lys Glu Thr
 20 25 30
 Ser Ala Ile Val Leu Gly Ala Thr Leu Leu Phe Phe Val Ile Ala Leu
 35 40 45
 Ile Leu Gly Pro Thr Leu Gly Ala Leu Val Tyr Cys Ala Tyr Lys Val
 50 55 60
 Tyr Thr Leu Gly Lys Met Ile Tyr Ser Leu Asn Lys Ala Lys Ala Lys
 65 70 75 80
 Val Leu Arg His Pro Ala Gln Asn Val Phe His Arg Ala Ala Gly Val
 85 90 95
 Ala Thr Ile Arg Ser Ser Glu Glu Ala Val Lys Ala Cys Lys Leu Tyr
 100 105 110
 Lys Ser Ala Met Ile Gly Ser Leu Val Val Ser Leu Ile Ala Ser Leu
 115 120 125
 Ala Leu Ile Ala Leu Thr Ala Gly Ile Val Leu Val Leu Phe Phe Val
 130 135 140
 Ala Pro Gly Ala Ala Pro Val Ile Thr Ala Ala Met Met Gly Ser Ala
 145 150 155 160
 Leu Gln Val Glu Ala Leu Cys
 165
 <210>253
 <211>106
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>253
 Lys Leu Ala Ile Ile Arg Arg Arg Arg Arg Gly Lys Arg Arg Ile
 1 5 10 15
 Arg Arg Val Tyr Arg Arg Ile Gly Arg Trp Arg Phe Ser Arg Asn His
 20 25 30
 Val Ala Ala Thr Ile Ala Pro Leu Leu Met Lys Gln Ser Leu Val Thr
 35 40 45
 Trp Arg Trp Arg Arg Leu Thr Val Gln Gly Asp Phe Ala Leu Asp Ile
 50 55 60
 Ser Ile Leu Val Ile Thr Glu Glu Leu Leu Val Ser Ser Tyr Arg Leu
 65 70 75 80
 Ser Lys His Phe Phe Ser Ser Trp Ser Asp Arg Lys Val Gly His Leu
 85 90 95
 Asn Asn Cys Val Thr His Tyr Thr Thr Gln
 100 105
 <210>254
 <211>390
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>254
 Ile Phe Leu Val Lys Phe Met Ser Ala Met Ile Ser Leu Ser Ser Ser
 1 5 10 15
 His Glu Ala Ser Ile Ala Ser Asn Thr Gln Val Arg Asp Val Leu Val
 20 25 30
 Ser Leu Ala Met Asp Glu Phe Val Glu His Asn Thr Glu Ile Leu Pro
 35 40 45
 Ile Lys Val Phe Leu Ala Arg Gly Thr Leu Ser Ser Thr Ala Ile Ile
 50 55 60
 Asp Asp Leu Lys Asp Val Val Glu Thr Glu Gly Glu His His Phe Gln
 65 70 75 80

Val Tyr Ser Asn Ile Ser Leu Lys Met Ile Tyr Gln Arg Phe Phe Glu
85 90 95
Lys Ile Phe Gly Ile Gly Cys Cys Pro Leu Leu Leu Val Thr Asp Ser
100 105 110
His His Thr Asp Pro Cys Gly Ala Leu Ile Thr Gly Ile Phe Ala Ala
115 120 125
Val Leu Phe Thr Val Leu Ala Ile Val Phe Gly Pro Thr Leu Gly Ile
130 135 140
Leu Cys Tyr Ser Ala Tyr Lys Ile Tyr Gln Leu Thr Lys Lys Ile Ser
145 150 155 160
Ser Leu Ser Arg Thr His Thr Glu Val Ile Asn Ser Val Gln Lys Ser
165 170 175
Asp Pro Phe Ile His Arg Ser Gly Ala Val Ala Ala Ala Ala Ser
180 185 190
Gln Ser Thr Ile Lys Ala Cys Lys Val Phe Arg Gln Ser Thr Leu Ile
195 200 205
Phe Phe Val Leu Gly Leu Ile Ile Thr Ile Ser Leu Ala Ala Leu Ile
210 215 220
Val Gly Leu Val Phe Ala Leu Phe Phe Leu Asp Pro Gly Ala Pro Ala
225 230 235 240
Val Met Thr Ala Ala Met Ile Gly Cys Cys Ala Ala Gly Gly Thr Gly
245 250 255
Ile Leu Leu Ser Val Ile Gly Phe Leu Leu Ala Ser Val Tyr Ser Val
260 265 270
Gln Lys Ser Gln Glu Gly Val His His Met His Thr Ala Leu Leu Arg
275 280 285
Cys Ile Val Ser Asn Thr Ile Ile Gln Met Pro Tyr Leu Pro Ile Thr
290 295 300
Pro Gly Thr Lys Lys Val Leu Thr Gln Ser Ile Arg Arg Tyr Gln Gln
305 310 315 320
Phe Phe Ser Asp Asp Glu Tyr Arg Asp Ile Glu Ser Glu Val Pro Leu
325 330 335
Asn Arg Gln Thr Thr Pro Pro Pro Ser Tyr Glu Thr Leu Phe His Glu
340 345 350
Glu Gly Ser Asp Gly Ser Ser Asn Val Ile Pro Arg Glu Ser Pro Pro
355 360 365
Ala Tyr Ser Thr Ile Asp Ser Ser Asn Ser Pro Phe Pro Ser Ser Ser
370 375 380
Pro Pro Pro Tyr Tyr Arg
385 390
<210>255
<211>125
<212>PRT
<213>Chlamydia pneumoniae
<400>255
Thr Pro Ser Trp Leu Phe Cys Thr Leu Tyr Thr Glu Ala Ser Lys Lys
1 5 10 15
Pro Ile Thr Glu Arg Arg Ile Pro Val Pro Pro Ala Ala Gln His Pro
20 25 30
Ile Ile Ala Ala Val Ile Thr Ala Gly Ala Pro Gly Ser Lys Lys Asn
35 40 45
Arg Ala Lys Thr Arg Pro Thr Ile Lys Ala Ala Lys Asp Ile Val Ile
50 55 60
Ile Lys Pro Ser Thr Lys Lys Ile Asn Val Asp Cys Leu Asn Thr Leu
65 70 75 80
Gln Ala Leu Ile Val Asp Cys Glu Ala Ala Ala Ala Thr Ala Pro
85 90 95
Glu Arg Cys Ile Lys Gly Ser Asp Phe Cys Thr Glu Phe Met Thr Ser
100 105 110
Val Trp Val Leu Asp Lys Glu Asp Ile Phe Leu Val Ser
115 120 125
<210>256
<211>95
<212>PRT

<213>Chlamydia pneumoniae

<400>256

Arg His Leu Lys Cys Asp Pro Arg Leu Thr Leu Ser Pro Gly Lys Ala
 1 5 10 15
 Leu Asp Ala Leu His Asn Leu Asn Gly Asn Glu Arg Ser Arg Asn Arg
 20 25 30
 Thr Phe Lys Ile Asn Lys Thr Thr Leu Thr Thr Ala Gln Thr Thr Ala
 35 40 45
 Ile Thr Gly Tyr Asn Ile Val Ser Thr Thr Lys Gln Ala Val Rhe Leu
 50 55 60
 Thr Gln Gly Phe Ile Ile Ile Ile Ser Leu Arg His Ser Lys Lys Asn
 65 70 75 80
 Arg Thr Ser His Lys Asn Asn Arg Trp Phe Leu Arg Lys Leu Ile
 85 90 95

<210>257

<211>291

<212>PRT

<213>Chlamydia pneumoniae

<400>257

Thr Cys Gln Lys Glu Ile Met Lys His Tyr Leu Ser Phe Ser Pro Ser
 1 5 10 15
 Ala Asp Phe Phe Ser Lys Gln Gly Ala Ile Glu Thr Gln Val Leu Phe
 20 25 30
 Gly Glu Arg Val Leu Val Lys Gly Ser Thr Cys Tyr Ala Tyr Ser Gln
 35 40 45
 Leu Phe His Asn Glu Leu Leu Trp Lys Pro Tyr Pro Gly His Ser Phe
 50 55 60
 Arg Ser Thr Leu Val Pro Cys Thr Pro Glu Phe His Ile His Pro Asn
 65 70 75 80
 Val Ser Val Val Ser Val Asp Ala Phe Leu Asp Pro Trp Gly Ile Pro
 85 90 95
 Leu Pro Phe Gly Thr Leu Leu His Val Asn Ser Gln Asn Thr Val Ile
 100 105 110
 Phe Pro Lys Asp Ile Leu Asn His Met Asn Thr Ile Trp Gly Ser Gly
 115 120 125
 Thr Pro Gln Cys Asp Pro Arg His Leu Arg Arg Leu Asn Tyr Asn Phe
 130 135 140
 Phe Ala Glu Leu Leu Ile Lys Asp Ala Asp Leu Leu Leu Asn Phe Pro
 145 150 155 160
 Tyr Val Trp Gly Gly Arg Ser Val His Glu Ser Leu Glu Lys Pro Gly
 165 170 175
 Val Asp Cys Ser Gly Phe Ile Asn Ile Leu Tyr Gln Ala Gln Gly Tyr
 180 185 190
 Asn Val Pro Arg Asn Ala Ala Asp Gln Tyr Ala Asp Cys His Trp Ile
 195 200 205
 Ser Ser Phe Glu Asn Leu Pro Ser Gly Gly Leu Ile Phe Leu Tyr Pro
 210 215 220
 Lys Glu Glu Lys Arg Ile Ser His Val Met Leu Lys Gln Asp Ser Ser
 225 230 235 240
 Thr Leu Ile His Ala Ser Gly Gly Gly Lys Lys Val Glu Tyr Phe Ile
 245 250 255
 Leu Glu Gln Asp Gly Lys Phe Leu Asp Ser Thr Tyr Leu Phe Phe Arg
 260 265 270
 Asn Asn Gln Arg Gly Arg Ala Phe Phe Gly Ile Pro Arg Lys Arg Lys
 275 280 285
 Ala Phe Leu
 290

<210>258

<211>168

<212>PRT

<213>Chlamydia pneumoniae

<400>258

Val Val Ala Lys Ser Thr Ile Gln Glu Ser Val Ala Thr Gly Arg Arg
 1 5 10 15

Lys Gln Ala Val Ser Ser Val Arg Leu Arg Pro Gly Ser Gly Lys Ile
 20 25 30
 Asp Val Asn Gly Lys Ser Phe Glu Asp Tyr Phe Pro Leu Glu Ile Gln
 35 40 45
 Arg Thr Thr Ile Leu Ser Pro Leu Lys Lys Ile Thr Glu Asp Gln Ser
 50 55 60
 Gln Tyr Asp Leu Ile Ile Arg Val Ser Gly Gly Gly Ile Gln Gly Gln
 65 70 75 80
 Val Ile Ala Thr Arg Leu Gly Leu Ala Arg Ala Leu Leu Lys Glu Asn
 85 90 95
 Glu Glu Asn Arg Gln Asp Leu Lys Ser Cys Gly Phe Leu Leu Glu Ile
 100 105 110
 Leu Glu Gly Lys Asn Val Lys Asn Thr Asp Ile Lys Lys Leu Val Lys
 115 120 125
 Ala Ser Asn Ser Leu Ser Val Lys Ile Phe Thr Val Phe Arg Ile Val
 130 135 140
 Phe Gly Lys Ser Leu Ser Tyr Tyr Arg Lys Ala Phe Leu Phe Leu Gly
 145 150 155 160
 Ile Pro Lys Asn Ala Arg Pro Leu
 165

<210>259

<211>149

<212>PRT

<213>Chlamydia pneumoniae

<400>259

Met Glu Lys Arg Lys Asp Thr Lys Thr Thr Ile Val Lys Ser Ser Glu
 1 5 10 15
 Thr Thr Lys Ser Trp Tyr Val Val Asp Ala Ala Gly Lys Thr Leu Gly
 20 25 30
 Arg Leu Ser Ser Glu Val Ala Lys Ile Leu Arg Gly Lys His Lys Val
 35 40 45
 Thr Tyr Thr Pro His Val Ala Met Gly Asp Gly Val Ile Val Ile Asn
 50 55 60
 Ala Glu Lys Val Arg Leu Thr Gly Ala Lys Lys Gly Gln Lys Ile Tyr
 65 70 75 80
 Arg Tyr Tyr Thr Gly Tyr Ile Ser Gly Met Arg Glu Ile Pro Phe Glu
 85 90 95
 Asn Met Met Ala Arg Lys Pro Asn Tyr Ile Ile Glu His Ala Ile Lys
 100 105 110
 Gly Met Met Pro Arg Thr Arg Leu Gly Lys Lys Gln Leu Lys Ser Leu
 115 120 125
 Arg Ile Val Lys Gly Asp Ser Tyr Glu Thr Phe Glu Ser Gln Lys Pro
 130 135 140
 Ile Leu Leu Asp Ile
 145

<210>260

<211>226

<212>PRT

<213>Chlamydia pneumoniae

<400>260

Met Ser Leu Leu Ile Glu Ala Lys Asn Leu Ser Lys Thr Ile Gln Gln
 1 5 10 15
 Gln Asn Gln Asn Ile Ser Ile Leu Thr Asp Val Ser Leu Ser Leu His
 20 25 30
 Ala Gly Glu Thr Ile Ser Ile Thr Gly Ala Ser Gly Asn Gly Lys Thr
 35 40 45
 Thr Leu Leu His Leu Leu Gly Thr Leu Asp Val Pro Ser Ser Gly Ser
 50 55 60
 Leu Arg Phe Phe Asp Lys Asp Leu Lys Asn Gln Asp Leu Ala Asn Phe
 65 70 75 80
 Arg Asn Gln His Ile Gly Phe Val Phe Gln Asn Phe Tyr Leu Leu Glu
 85 90 95
 Asp Asp Thr Val Leu Lys Asn Val Leu Met Pro Ala Leu Ile Ala Arg
 100 105 110

Lys Asn Ile Ser Lys Gly Ser Pro Val Tyr Thr Arg Ala Leu Glu Leu
 115 120 125
 Leu Asp Leu Val Asn Leu Glu Asp Lys Val Arg Thr Arg Cys Ser Lys
 130 135 140
 Leu Ser Gly Gly Glu Lys Gln Arg Val Ala Ile Ala Arg Ala Leu Ile
 145 150 155 160
 Asn Glu Pro Ala Ile Leu Leu Ala Asp Glu Pro Ser Gly Asn Leu Asp
 165 170 175
 Glu Glu Thr Ser Glu Gln Ile His Asn Leu Leu Leu Glu Gln Ala Ser
 180 185 190
 Ala Leu Cys Gly Ile Leu Ile Val Thr His Asn Lys His Leu Ala Ser
 195 200 205
 Arg Cys Ser Arg Glu Gly Val Leu Ser Asn Gly Lys Leu Phe Phe His
 210 215 220
 Asn Ser
 225
 <210>261
 <211>506
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>261
 Leu Glu Val Met Lys Phe Glu Phe Ser Val Ala Leu Lys Tyr Leu Ile
 1 5 10 15
 Pro Gly Arg Gly Arg Leu Tyr Ser Ala Ile Val Ser Leu Phe Ser Val
 20 25 30
 Gly Ile Ile Ser Leu Val Val Trp Leu Ser Ile Val Phe Ile Ser Val
 35 40 45
 Ile His Gly Leu Glu Gln Arg Trp Ile Glu Asp Leu Ser Gln Leu His
 50 55 60
 Ser Pro Ile Thr Ile Leu Pro Ser Asp Thr Tyr Tyr Ser Ser Tyr Tyr
 65 70 75 80
 Tyr Gln Ile Asp Lys His Ser Ser Leu Ser Asn Tyr Thr Thr Lys Thr
 85 90 95
 Leu Gly Glu Lys Ile Ala Ser Pro Gln Val Asp Pro Tyr Asp Pro Glu
 100 105 110
 Ser Asp Tyr Leu Leu Pro Glu Thr Phe Pro Leu Lys Asp Cys Asp Leu
 115 120 125
 Gly Gly Gln Gln Lys Asp Pro Val Lys Met Thr Leu Glu Ser Leu Gly
 130 135 140
 Pro Tyr Leu Gln Ser Gln His Gly Lys Val Ile Glu Phe Glu Gln Gly
 145 150 155 160
 Val Gly Tyr Leu Asp Ile Lys Thr Ser Leu Lys Leu Gln Lys Pro Gln
 165 170 175
 Pro Arg Asn Leu Thr His Phe Leu Thr Tyr Pro Ser Lys Leu Ser Tyr
 180 185 190
 Glu Asp Lys Val Leu Pro Tyr Asp Glu Thr Asp Tyr Thr Ser Ala Glu
 195 200 205
 Leu Asn Pro Phe Asn Arg Ser Pro Ser Gly Trp Gln Gln Asp Phe His
 210 215 220
 His Leu Glu Glu Leu Tyr Arg Gly Ala Ser Ile Ile Leu Pro Ser Thr
 225 230 235 240
 Tyr Lys Asp Ser Gly Tyr Lys Val Gly Asp Thr Gly Val Phe Ser Thr
 245 250 255
 Tyr Ser Ile Glu Asn Glu Lys Glu Thr Gln Tyr Thr Val His Val Ile
 260 265 270
 Gly Phe Tyr Asn Pro Gly Leu Ser Pro Leu Gly Gly Arg Thr Val Phe
 275 280 285
 Ile Asp Pro Asp Leu Ala Arg Ser Ile Arg Ser Gln Ser Glu Gly Leu
 290 295 300
 Gly Met Ser Asn Gly Phe His Leu Phe Phe Pro Asn Thr Lys Arg Ile
 305 310 315 320
 Val Phe Val Lys Lys Gln Ile Glu Asn Ile Leu Thr Ser Leu Gly Val
 325 330 335
 Asp Asp Tyr Trp Glu Ile Ser Ser Leu His Asp Tyr Asp Tyr Phe Gln

340 345 350
 Pro Ile Leu Asp Gln Leu Gln Ser Asp Gln Val Leu Phe Leu Phe Val
 355 360 365
 Cys Ile Leu Ile Leu Ile Val Ala Cys Ser Asn Ile Val Thr Met Ser
 370 375 380
 Met Leu Leu Val Asn Asn Lys Lys Lys Glu Ile Gly Ile Leu Lys Ala
 385 390 395 400
 Met Gly Thr Ser Ser Arg Ser Leu Lys Ile Ile Phe Ala Cys Cys Gly
 405 410 415
 Ala Phe Ser Gly Ala Cys Gly Val Val Ile Gly Thr Ile Phe Ala Ile
 420 425 430
 Ile Thr Leu Lys Asn Leu Gln Phe Ile Val Lys Ala Leu Asn Tyr Leu
 435 440 445
 Gln Gly Arg Glu Thr Phe Asn Thr Ala Phe Phe Gly Gln Asn Leu Pro
 450 455 460
 Asn Ser Val His Pro Gln Ala Ile Tyr Phe Leu Gly Leu Gly Thr Leu
 465 470 475 480
 Leu Leu Ala Ala Val Ser Gly Ala Leu Pro Ala Arg Lys Val Ala Lys
 485 490 495
 Met His Val Ser Glu Ile Leu Lys Ala Asp
 500 505

<210>262

<211>84

<212>PRT

<213>Chlamydia pneumoniae

<400>262

Phe Ser Ala Phe Thr Met Asn Cys Lys Phe Phe Asn Val Ile Ile Ala
 1 5 10 15
 Asn Ile Val Pro Ile Thr Thr Pro Gln Ala Pro Glu Asn Ala Pro Gln
 20 25 30
 Gln Ala Lys Met Ile Phe Lys Leu Arg Asp Asp Val Pro Ile Ala Leu
 35 40 45
 Arg Met Pro Ile Ser Phe Phe Leu Leu Phe Thr Arg Ser Ile Asp Ile
 50 55 60
 Val Thr Met Leu Glu Gln Ala Thr Ile Arg Ile Ser Met His Thr Lys
 65 70 75 80
 Arg Lys Arg Thr

<210>263

<211>503

<212>PRT

<213>Chlamydia pneumoniae

<400>263

Leu Pro Trp Met Ser Pro Phe Lys Lys Ile Val Asn Arg Leu Leu Cys
 1 5 10 15
 Tyr Ile Ser Phe Gln Lys Glu Ser Arg Thr Leu Pro Ile Ile Ile Arg
 20 25 30
 Glu Pro Arg Met Thr Thr Lys Ser Leu Gly Ser Phe Asn Ser Val Ile
 35 40 45
 Ser Lys Asn Lys Ile His Phe Ile Ser Leu Gly Cys Ser Arg Asn Leu
 50 55 60
 Val Asp Ser Glu Val Met Leu Gly Ile Leu Leu Lys Ala Gly Tyr Glu
 65 70 75 80
 Ser Thr Asn Glu Ile Glu Asp Ala Asp Tyr Leu Ile Leu Asn Thr Cys
 85 90 95
 Ala Phe Leu Lys Ser Ala Arg Asp Glu Ala Lys Asp Tyr Leu Asp His
 100 105 110
 Leu Ile Asp Val Lys Lys Glu Asn Ala Lys Ile Ile Val Thr Gly Cys
 115 120 125
 Met Thr Ser Asn His Lys Asp Glu Leu Lys Pro Trp Met Ser His Ile
 130 135 140
 His Tyr Leu Leu Gly Ser Gly Asp Val Glu Asn Ile Leu Ser Ala Ile
 145 150 155 160
 Glu Ser Arg Glu Ser Gly Glu Lys Ile Ser Ala Lys Ser Tyr Ile Glu

165 170 175
 Met Gly Glu Val Pro Arg Gln Leu Ser Thr Pro Lys His Tyr Ala Tyr
 180 185 190
 Leu Lys Val Ala Glu Gly Cys Arg Lys Arg Cys Ala Phe Cys Ile Ile
 195 200 205
 Pro Ser Ile Lys Gly Lys Leu Arg Ser Lys Pro Leu Asp Gln Ile Leu
 210 215 220
 Lys Glu Phe Arg Ile Leu Val Asn Lys Ser Val Lys Glu Ile Ile Leu
 225 230 235 240
 Ile Ala Gln Asp Leu Gly Asp Tyr Gly Lys Asp Leu Ser Thr Asp Arg
 245 250 255
 Ser Ser Gln Leu Glu Ser Leu Leu His Glu Leu Leu Lys Glu Pro Gly
 260 265 270
 Asp Tyr Trp Leu Arg Met Leu Tyr Leu Tyr Pro Asp Glu Val Ser Asp
 275 280 285
 Gly Ile Ile Asp Leu Met Gln Ser Asn Pro Lys Leu Leu Pro Tyr Val
 290 295 300
 Asp Ile Pro Leu Gln His Ile Asn Asp Arg Ile Leu Lys Gln Met Arg
 305 310 315 320
 Arg Thr Thr Ser Arg Glu Gln Ile Leu Gly Phe Leu Glu Lys Leu Arg
 325 330 335
 Ala Lys Val Pro Gln Val Tyr Ile Arg Ser Ser Val Ile Val Gly Phe
 340 345 350
 Pro Gly Glu Thr Gln Glu Glu Phe Gln Glu Leu Ala Asp Phe Ile Gly
 355 360 365
 Glu Gly Trp Ile Asp Asn Leu Gly Ile Phe Leu Tyr Ser Gln Glu Ala
 370 375 380
 Asn Thr Pro Ala Ala Glu Leu Pro Asp Gln Ile Pro Glu Lys Val Lys
 385 390 395 400
 Glu Ser Arg Leu Lys Ile Leu Ser Gln Ile Gln Lys Arg Asn Val Asp
 405 410 415
 Lys His Asn Gln Lys Leu Ile Gly Glu Lys Ile Glu Ala Val Ile Asp
 420 425 430
 Asn Tyr His Pro Glu Thr Asn Leu Leu Thr Ala Arg Phe Tyr Gly
 435 440 445
 Gln Ala Pro Glu Val Asp Pro Cys Ile Ile Val Asn Glu Ala Lys Leu
 450 455 460
 Val Ser His Phe Gly Glu Arg Cys Phe Ile Glu Ile Thr Gly Thr Ala
 465 470 475 480
 Gly Tyr Asp Leu Val Gly Arg Val Val Lys Lys Ser Gln Asn Gln Ala
 485 490 495
 Leu Leu Lys Thr Ser Lys Ala
 500

<210>264

<211>179

<212>PRT

<213>Chlamydia pneumoniae

<400>264

Ala Thr Ser Thr Val Cys Ala Leu Trp Ile Leu Gln Thr Tyr Gln Ser
 1 5 10 15
 His Asp Asp Ala Ala Ser Cys Ser Phe Arg Arg Ala Cys Arg Phe Gly
 20 25 30
 Arg Tyr Trp Leu Gly Gly Val Asn Val Pro Trp Asn Lys Phe Asn Gln
 35 40 45
 Thr Ser Thr Gln Ser Thr Val Ile Asn Ser Ala Ile Tyr Ile Asp Ser
 50 55 60
 Ser Gln Thr Trp Met Met Arg Phe Gln Ala Ser Ala Ser Ile Pro Arg
 65 70 75 80
 Leu Phe Arg Ile Ser Ile Phe Met Thr Lys His Gly Asp Trp Ile Asp
 85 90 95
 Asn Gly Thr Gly Gly Glu Leu Leu Leu Val Ala Tyr Glu Ala Asn Gln
 100 105 110
 Asn Pro Leu Phe Pro Asp Ile Arg Ile Glu Leu Ala Met Ser Thr Cys
 115 120 125

Ser Gly Thr Ser Tyr Tyr Arg Ala Arg Pro Met Gln Trp Leu Cys Ser
 130 135 140
 Thr Tyr Tyr Ala Val Arg Pro Gly Tyr Phe Val Leu Glu Asn Arg Ser
 145 150 155 160
 Tyr Ser Phe Arg Val Gln Ser Phe Ser Trp Asn Ile Ala Thr Leu Pro
 165 170 175
 Phe Val Asn

<210>265

<211>175

<212>PRT

<213>Chlamydia pneumoniae

<400>265

Phe Cys Gly Gly Arg Leu Met Ser Ser Ser Ile Pro Thr Thr Gln Lys
 1 5 10 15
 Ile Thr Ile Ser Ile Pro Thr Phe Val Arg Phe Asn Ile Glu Ser Ile
 20 25 30
 Asn Leu Thr Asp Glu Gln Lys Lys Thr Ala Leu Thr Ile Gly Gln Asn
 35 40 45
 Ile Ala Thr Glu Asn Thr Gln Val Leu Gly Asn Phe Val Asp Ala Asp
 50 55 60
 Gly Gly Leu Ile Cys Gln Asn Asp Leu Ser Val Gly Gly Asn Ile Asn
 65 70 75 80
 Ile Thr Pro Gln Thr Phe Asn Thr Met Val Phe Asn Gly Arg Val Asn
 85 90 95
 Leu Ser Asn Ser Pro Phe Ser Tyr Gln Asp Ser Leu Gly Asn Lys Arg
 100 105 110
 Gln Asp Tyr Ala Asn Ile Asn Thr Glu Gln Pro Gln Gln Tyr Val Pro
 115 120 125
 Tyr Gly Tyr Tyr Lys Leu Thr Arg Val Met Met Met Gln Arg Ala Ala
 130 135 140
 Leu Ser Gly Gly His Val Gly Ser Gly Asp Ile Gly Trp Gly Glu Ser
 145 150 155 160
 Met Tyr Leu Gly Ile Ser Ser Ile Lys Arg Gln His Lys Val Gln
 165 170 175

<210>266

<211>264

<212>PRT

<213>Chlamydia pneumoniae

<400>266

Ile Pro Met Lys Thr Leu Gly Val Lys Asp Gln Asn Leu Phe Ile Asp
 1 5 10 15
 Gln Ala Thr Leu Ser Val Glu Arg Asn Val Arg Ile Glu Asn Asn Leu
 20 25 30
 Glu Thr Arg Asp Leu Lys Val Leu Asp Thr Thr Thr Ser Pro Cys Glu
 35 40 45
 Phe Ile Val Lys Gly Asn Val Ser Ala Glu Gly Ser Gln Leu Asn Ala
 50 55 60
 Thr Thr Leu Ser Asp Gly Phe Asn Ile Tyr Ser Lys Thr Asp Val Ser
 65 70 75 80
 Gln Thr Pro Val Cys Asn Asn Ile Ser Asp Pro Gln Ser Ala Arg Asp
 85 90 95
 Ala Leu Thr Phe Ser Tyr Tyr Arg Lys Thr Gly Cys Gln Ala Ala Asn
 100 105 110
 Leu Tyr Thr Tyr Tyr Pro Gly Asn Gly Tyr Tyr Val Ala Pro Asn Thr
 115 120 125
 Thr Ile Glu Thr His Val Ala Ala Ile Thr Ser Lys Ser Val Ser Arg
 130 135 140
 Asn Ala Thr Pro Asp Phe Ser Arg Tyr Ala Asp Ile Glu Pro Val Val
 145 150 155 160
 Lys Leu Lys Gln Val Gly Ile Tyr Gln Val Thr Met Gln Leu Thr Arg
 165 170 175
 Trp Ser Gly Gln His Asp Gly Asp Asn Ser Ala Thr Leu Ile Leu Asn
 180 185 190

Phe Val Ser Gly Asn Asn Lys Thr Leu Leu Cys Thr Ser Asp Thr Arg
 195 200 205
 Gly Gly Tyr Ser Ser Asp Arg Thr Ser Val Ala Val Thr Ala Ile Phe
 210 215 220
 Ser Val Thr Glu Leu Val Ser Ser Pro Pro Tyr Asp Tyr Pro Trp Ile
 225 230 235 240
 Asn Leu Glu Ser Thr Ile Trp Met Asn Leu Met Ser Leu Ser Thr Cys
 245 250 255
 Gly His Leu Val Ser Ile Ser Ile
 260

<210>267

<211>285

<212>PRT

<213>Chlamydia pneumoniae

<400>267

Thr Leu Leu Lys Val Ile Met Lys Asn Asn Ile Asn Asn Asn Glu Cys
 1 5 10 15
 Tyr Phe Lys Leu Asp Ser Thr Val Asp Gly Asp Leu Leu Ala Ala Asn
 20 25 30
 Leu Lys Thr Phe Asp Thr Gln Ala Gln Gly Ile Ser Ser Thr Glu Thr
 35 40 45
 Phe Ser Val Gln Gly Asn Ala Thr Phe Lys Asp Gln Val Ser Ala Thr
 50 55 60
 Gly Leu Thr Ser Gly Thr Thr Tyr Asn Leu Asn Ala Gln Asn Phe Thr
 65 70 75 80
 Ser Ser Gln Ile Ser Ile Asp Phe Lys Asn Asn Arg Leu Ser Asn Cys
 85 90 95
 Ala Leu Pro Lys Glu Asp Cys Asp Pro Val Pro Ala Asn Tyr Val Arg
 100 105 110
 Ser Pro Glu Tyr Phe Phe Cys Ser Lys Pro Leu Ile Gly Asp Phe Asp
 115 120 125
 Phe Asn Ser Gly Glu Ser Tyr Leu Pro Leu Thr Gly Ser Glu Tyr Thr
 130 135 140
 Leu Tyr Gln Ser Arg Asn Val Asn Ser Ile Phe Arg Phe Ile Gly Trp
 145 150 155 160
 Lys Gln Ser Thr Arg Glu Leu Thr Val Gly Gly Asn Thr Ala Ile Gln
 165 170 175
 Phe Leu Ala Ala Gly Thr Tyr Ile Val Ser Phe Thr Val Gly Lys Arg
 180 185 190
 Trp Gly Trp Asn Asn Gly Trp Gly Gly Ala Ile Tyr Ile Asn Asn Gly
 195 200 205
 Leu Gly Gln Val Gln Cys Glu Ser Thr Ile Tyr Ser Gly Gly Gly Tyr
 210 215 220
 Ala Thr Ile Gly Thr Leu Gly Thr Ser Ile Tyr Arg Ala Ser Val Asp
 225 230 235 240
 Val Ala Pro Asn Pro Asn Asp Pro Asn Ala Ser Asp Arg Tyr Arg Ala
 245 250 255
 Gly Ile Phe Tyr Leu Ser Asn Gly Gly Ser Ser Ala Gly Ile Gly Asn
 260 265 270
 Tyr Ser Phe Ser Leu Leu Tyr Tyr Pro Asp Asp Arg Gly
 275 280 285

<210>268

<211>295

<212>PRT

<213>Chlamydia pneumoniae

<400>268

Phe Cys Gly Gly Arg Leu Met Ser Asn Pro Thr Pro Lys Thr Lys Ile
 1 5 10 15
 Ser Ile Pro Thr Phe Val Arg Phe Asn Ile Gln Ser Ile Asn Leu Thr
 20 25 30
 Glu Asp Gln Lys Lys Thr Thr Phe Thr Val Gly Gly Lys Val Thr Thr
 35 40 45
 Glu Asn Thr Val Val Arg Gly Asp Leu Thr Cys Thr Asp Gly Gly Leu
 50 55 60

Thr Cys Gln Ser Asp Leu Thr Ile Gln Lys Asp Ile Asn Ile Arg Pro
 65 70 75 80
 Thr Ser Thr Asn Ser Met Val Phe Asp Gly Arg Leu Asn Leu Ser Asn
 85 90 95
 Ser Pro Leu Ser Tyr Lys Asn Ser Gln Gly Gln Asp Ile Thr Asp Tyr
 100 105 110
 Glu Lys Met Ser Ser Gly Lys Pro Gln Glu Tyr Val Pro Phe Gly Tyr
 115 120 125
 Tyr Lys Arg Thr Gln Ile Met Met Ala Gln Arg Ala Ala His Ser Ser
 130 135 140
 Gly Tyr Val Gly Gly Gly Ser Val Pro Ser Gly Ser Tyr Val Pro Trp
 145 150 155 160
 Asn Lys Phe Asp Gln Thr Ser Thr Gln Lys Thr Ser Gly Thr Glu Ile
 165 170 175
 Tyr Ile Asp Pro Asn Asp Ser Thr Lys Leu Val Phe Glu Val Asn Asn
 180 185 190
 Lys Val Pro Lys Leu Phe Arg Ile Ser Val Ile Met Ala Lys His Gly
 195 200 205
 Ser Trp Leu Asp Asn Gly Thr Gly Ala Asp Ile Leu Leu Ala Ala Asn
 210 215 220
 Glu Tyr Glu Gln Gly Gly Gly Arg Ile Asn Val Thr Asp Leu Ala Met
 225 230 235 240
 Thr Thr Ser Arg Gly Ser Ser Tyr Tyr Glu Thr Arg Pro Leu Gln Val
 245 250 255
 Val Cys Val Thr Tyr Tyr Ala Gln Asn Asn Gly Tyr Phe Thr Phe Gln
 260 265 270
 Asn Arg Ala Gly Gly Gly Leu Arg Val Ser Phe Phe Ser Trp Asn Ile
 275 280 285
 Val Ala Leu Pro Tyr Val Glu
 290 295
 <210>269
 <211>290
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>269
 Gly Val Val Met Lys Arg Arg Asn Leu Gln Lys Ile Leu Pro Asn Ala
 1 5 10 15
 Ser Thr Pro Ser Thr Asn Val Ala Glu Asn Thr Gly Ile Lys Asp Gln
 20 25 30
 Asn Leu Phe Leu Asp Gln Ala Thr Leu Asn Val Asp Gly Asn Val Asp
 35 40 45
 Ile Glu Asn Phe Leu Glu Thr Arg Asp Leu Lys Val Ala Asp Thr Ile
 50 55 60
 Thr Ser Pro Cys Glu Phe Thr Val Gly Gly Gly Leu Ser Ala Glu Ser
 65 70 75 80
 Ser Gln Phe Lys Ala Thr Thr Leu Ser Lys Gly Leu Glu Ile Thr Ser
 85 90 95
 Glu Asp Gln Asp Gly Arg Val Pro Lys Phe Thr Asn Val Ser Asp Pro
 100 105 110
 Gln Ser Pro Arg Asp Ala Leu Thr Tyr Asn Tyr Tyr Arg Asn Thr Gly
 115 120 125
 Cys Gln Ala Leu Asn Leu Tyr Thr Tyr Tyr Ser Ser Ser Gln Pro Thr
 130 135 140
 Thr Val Gly Lys Pro Ile Glu Thr Val Cys Gln Asn Pro Asn Pro Glu
 145 150 155 160
 Thr Tyr Arg Ile Ser Ala Ser Ala Lys Ile Tyr Asp Ala Val Thr Arg
 165 170 175
 Phe Pro Tyr Ile Gln Phe Lys Ala Pro Gly Ile Tyr Gln Val Thr Ile
 180 185 190
 Gln Ile Arg Arg Glu Ser Gly Gln His Ser Gly Leu Asp Asn Pro Asn
 195 200 205
 Leu Tyr Leu Asn Leu Met Ile Gly Asn Asn Lys Thr Leu Leu Cys Ala
 210 215 220
 Ser Asp Thr Arg Gly Tyr Ser Gly Gly His Arg Thr Ser Ile Ala Val

225 230 235 240
 Thr Gly Thr Phe Thr Leu Thr Glu Ile Val Ala Thr Pro Pro His Asp
 245 250 255
 Tyr Pro Trp Leu Phe Leu Glu Thr Thr Ile Gly Leu Asp Ile Lys Ser
 260 265 270
 Met Ser Thr Cys Val Ile Trp Phe Pro Phe Gln Ala Asn Phe Ala Glu
 275 280 285
 Val Asp
 290
 <210>270
 <211>134
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>270
 Cys Phe Ser Phe Cys Arg Leu Gly Ser Lys Phe Glu Lys Ile Thr Leu
 1 5 10 15
 Gly Gly Asn Thr Ala Ile Gln Leu Leu Ala Ala Gly Thr Tyr Ile Leu
 20 25 30
 Thr Phe Thr Ile Gly Lys Arg Trp Gly Trp Asn Asn Gly Trp Gly Gly
 35 40 45
 Ser Ile Arg Leu Phe Glu Gly Lys Tyr Thr Gly Asp Gly Thr Met Leu
 50 55 60
 Cys Gly Ser Thr Val Tyr Ser Gly Gly Gly Tyr Ser Thr Ile Gly Tyr
 65 70 75 80
 Leu Ser Thr Ala Val Tyr Arg Asp His Ser Asp Ile Asp Pro Asp Pro
 85 90 95
 Asn Asn Pro Ser Asp Lys Tyr Met Asn Asn Phe Leu Phe Val Arg Asn
 100 105 110
 Gly Asp His Ser Ala Val Ile Gly Asn Tyr Ser Phe Thr Leu Leu Tyr
 115 120 125
 Phe Ala Gly Asp Lys Val
 130
 <210>271
 <211>197
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>271
 Ile Tyr Phe Val Phe Lys Arg Lys Thr Tyr Asn Tyr Phe Ile Glu Met
 1 5 10 15
 Thr Thr Thr Asn Asn Gln Asp Asn Asn Glu Cys Tyr Phe Lys Leu Asp
 20 25 30
 Ser Thr Val Asp Gly Asp Leu Leu Ala Ser Asn Ile Gln Thr Phe Asp
 35 40 45
 Lys Gln Ala Lys Gly Ile Ser Ser Thr Glu Thr Phe Ser Val Gln Gly
 50 55 60
 Asn Ala Thr Phe Lys Glu Lys Val Ser Ala Thr Gly Leu Thr Ser Ala
 65 70 75 80
 Ser Thr Tyr Lys Leu Asn Ala Thr Gly Pro Ala Pro Ser Ser Ile Thr
 85 90 95
 Ile Asp Met Lys Asn Asn Arg Leu Ser Asn Pro Ala Leu Pro Lys Asn
 100 105 110
 Pro Cys Asp Pro Val Pro Ala Asn Tyr Val Arg Ser Pro Gln Tyr Phe
 115 120 125
 Phe Cys Ala Lys Pro Ile Glu Gly Thr Phe Met Phe Asp Gly Ser Ser
 130 135 140
 Arg Tyr Leu Pro Ile Thr Gly Asp Gly Ser Asn Tyr Thr Leu Tyr Gln
 145 150 155 160
 Ser Ser Lys Ala Gly Asp Val Phe Arg Phe Val Asp Trp Asp Gln Asn
 165 170 175
 Ser Lys Lys Leu His Leu Gly Gly Thr Gln Pro Tyr Asn Phe Leu Leu
 180 185 190
 Gln Glu Pro Ile Ser
 195
 <210>272

<211>181
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>272
 Ala Tyr Leu Asp Phe Ser Lys Arg Ser Cys Val Glu Glu Asp His Val
 1 5 10 15
 Ser Lys Lys Ile Asn Arg Asn Asp Leu Cys Pro Cys Gly Ser Asn Lys
 20 25 30
 Lys Tyr Lys Lys Cys Cys Leu Lys Lys Glu Glu Gln Thr Ala Arg Tyr
 35 40 45
 Thr Thr Glu Gly Lys Phe Lys Phe Ser Ala Glu Val Leu Ser Ala Ser
 50 55 60
 Glu Gln Gly Glu Ala Gly Asp Asn Cys Thr Lys Leu Phe Gln Arg Leu
 65 70 75 80
 Ser Gln Ser Leu Thr Ser Glu Gln Lys Ala Ala Val Gly Lys Phe His
 85 90 95
 Gln Ile Thr Lys Asn Lys Glu Val Met Ser Lys Lys Ala Leu Lys Lys
 100 105 110
 Ala Gln Ala Lys Glu Glu Lys Leu Val Thr Glu Lys Leu Gln Gln His
 115 120 125
 Asn Phe Glu Ile Leu Asn Thr Gly Glu Asn Leu Ala Pro Pro Met Glu
 130 135 140
 Ser Thr Ala Thr Leu Asn Gln Asp Thr Asn Phe Val Cys Glu Asp Phe
 145 150 155 160
 Ile Pro Thr Gln Glu Asp Phe Arg Ile Ser Glu Asn Ser Gln Lys Pro
 165 170 175
 Pro Val Glu Glu Asp
 180

<210>273
 <211>206
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>273
 Met Ser Thr Leu Leu Leu Asn Pro Pro Trp Met Lys Ala Gly Lys Arg
 1 5 10 15
 Ile Glu Ser Leu Val Arg Lys Ala Leu Tyr Thr His Thr Met Leu Ala
 20 25 30
 Asn His Arg Lys Ile Val Val Ala Leu Ser Gly Gly Lys Asp Ser Leu
 35 40 45
 Thr Leu Leu Leu Met Leu Lys Ala Ile Ser Gly Arg Gly Phe Pro Asp
 50 55 60
 Leu Asp Leu His Ala Val Asn Ile Gly Gly Lys Tyr Ser Cys Gly Ala
 65 70 75 80
 Glu Val Asn Lys Pro Tyr Leu Thr Arg Ile Cys Asp Gln Leu Cys Ile
 85 90 95
 Pro Phe Arg Thr Ile Pro Ser Pro Tyr Ala Pro Glu Thr Pro Glu Cys
 100 105 110
 Tyr Pro Cys Ser Gln Ala Arg Arg Arg Leu Leu Phe Gln Ala Ala Lys
 115 120 125
 Glu Ile Gly Ala Ser Ala Ile Ala Phe Gly His His Arg Asp Asp Leu
 130 135 140
 Val Gln Thr Ala Leu Leu Asn Leu Leu His Lys Ala Glu Phe Ala Gly
 145 150 155 160
 Met Leu Pro Val Leu Asp Met Val His Phe Gly Val Thr Ile Leu Arg
 165 170 175
 Pro Leu Ile Phe Thr Pro Glu Phe Trp Ile Arg Lys Phe Ala Lys Glu
 180 185 190
 Asn Ala Ser Gln Glu Ser Leu Ala Val Val Pro Trp Phe His
 195 200 205
 <210>274
 <211>281
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>274

Leu Val Leu Met Asn Lys Arg Leu Lys Ile Ile Leu Thr Asn Asp Asp
 1 5 10 15
 Gly Ile Thr Ala Lys Gly Met Ser Cys Leu Val Ser Ala Leu Leu Glu
 20 25 30
 Ala Asn Ile Gly Asp Ile Tyr Ile Ala Ala Pro Gln Ala Glu Gln Ser
 35 40 45
 Gly Lys Ser Met Ala Ile Ser Leu Asn Gln Val Val Cys Ala Ser Pro
 50 55 60
 Tyr Ala Tyr Pro Gln Pro Val Lys Glu Ala Trp Ala Val Gly Gly Ser
 65 70 75 80
 Pro Thr Asp Cys Val Arg Leu Gly Leu Arg Thr Leu Phe Glu Ser Val
 85 90 95
 Ser Pro Asp Leu Val Ile Ser Gly Ile Asn Cys Gly Asn Asn Ile Cys
 100 105 110
 Lys Asn Ala Trp Tyr Ser Gly Thr Ile Gly Ala Ala Lys Gln Ala Leu
 115 120 125
 Val Asp Gly Ile Pro Ser Met Ala Leu Ser Gln Asp Asn His Ile Ser
 130 135 140
 Phe Phe Gln Gln Asp Lys Ala Pro Glu Ile Leu Lys Ala Leu Val Ile
 145 150 155 160
 Tyr Leu Leu Ser Gln Pro Phe Pro Cys Leu Thr Gly Leu Asn Ile Asn
 165 170 175
 Phe Pro Thr Ser Pro Gly Gly Ser Ser Trp Glu Gly Met Arg Leu Val
 180 185 190
 Pro Pro Gly Asp Glu Phe Phe Tyr Glu Glu Pro Gln Tyr Leu Gly Ser
 195 200 205
 Val Asn Lys Asn Gln Tyr Tyr Val Gly Lys Ile Ser Gly Val Arg Ile
 210 215 220
 Gly Glu His Pro Ser Glu Glu Leu Ala Cys Met Leu Glu Asn His Ile
 225 230 235 240
 Ser Val Ser Pro Ile Phe Ser Gln Asn Ser Pro Ile Gly Leu Met Thr
 245 250 255
 Leu Glu Glu Phe Gln Lys Thr Gln Glu Asn Phe Asn Ala Ser Leu Leu
 260 265 270
 Ser Ser Glu Leu Thr Thr Lys Ile Phe
 275 280

<210>275

<211>313

<212>PRT

<213>Chlamydia pneumoniae

<400>275

Leu Arg Val Arg Pro Pro Ser Leu Ala Lys Tyr Ala Phe Arg Gly Phe
 1 5 10 15
 Arg Met Ser His Gly Pro Arg Pro Thr Lys Phe Ser Phe Pro Leu Tyr
 20 25 30
 Phe Ser Lys Thr Leu Ser Trp Phe Ile Leu Gly Gly Phe Leu Ala Ala
 35 40 45
 Cys Gly Val Gln Met Val Leu Val Pro Asn Glu Leu Ile Asp Gly Gly
 50 55 60
 Ile Val Gly Leu Ser Ile Ile Ala Ser His Phe Leu Gly His Lys Ala
 65 70 75 80
 Leu Pro Phe Cys Leu Val Leu Phe Asn Leu Pro Phe Val Phe Leu Ala
 85 90 95
 Phe Lys Gln Ile Gly Lys Tyr Phe Val Ile Gln Met Leu Thr Ala Val
 100 105 110
 Ile Ile Phe Ser Cys Ser Leu Trp Leu Ile Asp Gln Leu Pro Ser Trp
 115 120 125
 Leu Gly Met Ser Pro Phe Val Phe Lys Gly Ser Glu Met Glu Thr Val
 130 135 140
 Val Leu Gly Gly Ala Ile Ile Gly Val Gly Cys Gly Leu Ile Ile Arg
 145 150 155 160
 His Gly Gly Ser Thr Asp Gly Thr Glu Ile Leu Gly Ile Ile Ile Asn
 165 170 175
 Lys Lys Lys Gly Tyr Thr Val Gly Gln Ile Ile Leu Phe Val Asn Phe

180 185 190
 Phe Ile Phe Ala Leu Ser Gly Ile Val Tyr Lys Asn Trp His Thr Ala
 195 200 205
 Phe Val Ser Phe Leu Thr Tyr Gly Ile Ala Thr Lys Val Met Asp Met
 210 215 220
 Val Ile Leu Gly Leu Glu Asp Thr Lys Ser Val Thr Ile Ile Thr Ser
 225 230 235 240
 Ser Pro Arg Lys Leu Gly His Ile Leu Met Glu Thr Leu Gly Ile Gly
 245 250 255
 Leu Thr Tyr Ile His Ala Glu Gly Gly Tyr Ser Gly Glu Pro Arg Asn
 260 265 270
 Leu Leu Tyr Val Val Val Glu Arg Leu Gln Leu Ser Gln Leu Lys Glu
 275 280 285
 Ile Val His Arg Glu Asp Pro Ser Ala Phe Ile Ala Ile Glu Asn Leu
 290 295 300
 His Glu Val Ile Asn Gly Arg Arg Thr
 305 310

<210>276

<211>192

<212>PRT

<213>Chlamydia pneumoniae

<400>276

Met Lys Arg Tyr Val Val Gly Ile Ser Gly Ala Ser Gly Val Ile Leu
 1 5 10 15
 Ala Val Lys Leu Ile Lys Glu Leu Val Asn Ala Lys His Gln Val Glu
 20 25 30
 Val Ile Ile Ser Pro Ser Gly Arg Lys Thr Leu Tyr Tyr Glu Leu Gly
 35 40 45
 Cys Gln Ser Phe Asp Ala Leu Phe Ser Glu Glu Asn Leu Glu Tyr Ile
 50 55 60
 His Thr His Ser Ile Gln Ala Ile Glu Ser Ser Leu Ala Ser Gly Ser
 65 70 75 80
 Cys Pro Val Glu Ala Thr Ile Ile Ile Pro Cys Ser Met Thr Thr Val
 85 90 95
 Ala Ala Ile Ser Ile Gly Leu Ala Asp Asn Leu Leu Arg Arg Val Ala
 100 105 110
 Asp Val Ala Leu Lys Glu Arg Arg Pro Leu Ile Leu Val Pro Arg Glu
 115 120 125
 Thr Pro Leu His Thr Ile His Leu Glu Asn Leu Leu Lys Leu Ser Lys
 130 135 140
 Ser Gly Ala Thr Ile Phe Pro Pro Met Pro Met Trp Tyr Phe Lys Pro
 145 150 155 160
 Gln Ser Val Glu Asp Leu Glu Asn Ala Leu Val Gly Lys Ile Leu Ala
 165 170 175
 Tyr Leu Asn Ile Pro Ser Asp Leu Thr Lys Gln Trp Ser Asn Pro Glu
 180 185 190

<210>277

<211>296

<212>PRT

<213>Chlamydia pneumoniae

<400>277

Val Arg Leu Asn Tyr Phe Leu Asn Leu Val Asn Phe Lys Tyr Ser Ile
 1 5 10 15
 Phe Ser Ile Leu Phe Leu Ser Ala Ser Thr Val Phe Ala Leu Ser Ile
 20 25 30
 Asn Glu Ile Ser Gln Asn Leu Ser Phe Lys Glu Gly Phe Lys Ile Ser
 35 40 45
 Val Phe Gly Ala Ile Ala Phe Val Phe Ala Arg Thr Thr Gly Ile Val
 50 55 60
 Val Asn Gln Cys Ile Asp Arg Phe Ile Asp Lys Lys Asn Thr Arg Thr
 65 70 75 80
 Ser Lys Arg Val Leu Pro Ala Asn Leu Val Ser Leu Asn Phe Ala Trp
 85 90 95
 Val Leu Ser Leu Phe Cys Ser Phe Leu Phe Leu Cys Lys Ile

100 105 110
 Leu Arg Ile Phe Ser Leu Gly Ile Ala Ser Leu Thr Leu Met Ile Val
 115 120 125
 Tyr Pro Tyr Met Lys Arg Val Thr Phe Phe Cys His Trp Gly Leu Gly
 130 135 140
 Leu Val Tyr Thr Val Ala Ile Leu Met Asn Phe Cys Ala Phe Ala Glu
 145 150 155 160
 Ser Gly Leu Ser Met Arg Leu Cys Phe Leu Ala Leu Leu Trp Gly Gly
 165 170 175
 Ser Val Gly Met Val Ile Ala Ala Asn Asp Ile Ile Tyr Ala Ile Glu
 180 185 190
 Asp Thr Glu Phe Asp Arg Glu Glu Gly Leu Arg Ser Val Pro Ala His
 195 200 205
 Tyr Gly Glu Lys Lys Ala Val Glu Ile Ala Lys Val Asn Leu Trp Val
 210 215 220
 Ser Tyr Leu Ala Tyr Ile Phe Ser Gly Phe Val Gly Ser Leu Asp Lys
 225 230 235 240
 Glu Phe Tyr Phe Thr Ala Ile Ile Pro Leu Val Val Ile Leu Lys Val
 245 250 255
 Val Arg Met Tyr Ser Asn Tyr Ser Lys Lys Asp Gln Glu Gly Glu Ser
 260 265 270
 Gln Ile Leu Phe Ser Glu Tyr Cys Asp Cys Ser Ile Val Ser Cys Lys
 275 280 285
 Tyr Asp Phe Val Leu Glu Phe Glu
 290 295

<210>278

<211>232

<212>PRT

<213>Chlamydia pneumoniae

<400>278

Ile Met Ala Leu Asp Glu Ile Asn Asn Gln Asn Asn Pro Ser Gln Gln
 1 5 10 15
 Ile Ala Ser Ser Thr Ser Gln Thr Ser Lys Ile Asn Gln Asp Arg Lys
 20 25 30
 Thr Phe Ala Cys Thr Val Thr Leu Leu Val Val Ala Thr Leu Met Ile
 35 40 45
 Leu Ser Gly Ile Val Leu Leu Phe Thr Ile Gly Ser Leu Gly Leu Ser
 50 55 60
 Val Pro Leu Ser Gly Ile Leu Gly Thr Phe Ala Val Thr Val Gly Ala
 65 70 75 80
 Val Leu Phe Ile Thr Gly Leu Thr Ile Leu Val Arg Lys Ser Leu Gly
 85 90 95
 Ile Glu Gln Lys Asn Glu Asp Leu Asn Phe Leu Lys Ile Lys Thr Pro
 100 105 110
 Thr Pro Pro Ala Arg Pro Leu Met Ser Lys Phe Ser Val Thr Cys Ser
 115 120 125
 Thr Thr Ser Ile Val Leu Gly Met Ala Leu Leu Ile Gly Ala Val Val
 130 135 140
 Ser Val Phe Phe Leu Thr Gly Tyr Leu Gln Leu Gly Leu Cys Ala Gly
 145 150 155 160
 Leu Val Gly Leu Gly Thr Ala Leu Phe Val Ala Gly Leu Ala Arg Met
 165 170 175
 Ser Pro Arg Ser Leu Ala Asp Gln Glu Gly Ser Gly Ser Ala Asp Ser
 180 185 190
 Gln Ser Asn Ile Val Gly Ile Gly Glu Pro Lys Ala Ala Gln Glu Gln
 195 200 205
 Lys Trp Tyr Lys Met Ala Val Val Arg Gly Glu Asp Gly Ile Pro Thr
 210 215 220
 Ala Ile Arg Leu Thr Pro Glu Lys
 225 230

<210>279

<211>263

<212>PRT

<213>Chlamydia pneumoniae

<400>279

Val Ser Ile Met Ser Leu Asn Lys Thr Asn Ala Leu Leu Asn Gln Pro
 1 5 10 15
 Glu Pro Ala Val Cys Leu Asn Ala Trp Asp Pro Lys Tyr Ile Asn Gln
 20 25 30
 Asp Arg Lys Thr Phe Ala Cys Thr Val Thr Leu Leu Val Ile Ala Thr
 35 40 45
 Leu Met Ile Leu Thr Thr Gly Val Ile Val Leu Leu Ala Met Gly Ser
 50 55 60
 Pro Gly Leu Ser Val Leu Val Ser Thr Ile Ile Gly Thr Ser Val Thr
 65 70 75 80
 Thr Leu Gly Thr Ala Leu Phe Ile Ile Gly Leu Val Lys Leu Ile Lys
 85 90 95
 Lys Ser Leu Ala Trp Ile Gln Tyr Gln Lys Tyr Phe Gln Glu Val Val
 100 105 110
 Lys Gln Lys Tyr Glu Pro Phe Ser Ile Pro Lys Asn Asp Asn Val His
 115 120 125
 Lys Leu Thr Ser Cys Leu Pro Ser Pro Leu Asp Ile Glu Ser Pro Ser
 130 135 140
 Pro Glu Ala Ser Thr Pro Val Ser Lys Leu Arg Ile Ala Cys Ser Gly
 145 150 155 160
 Val Ala Ile Val Leu Gly Val Thr Leu Leu Ile Gly Ala Val Val Ser
 165 170 175
 Val Phe Phe Cys Thr Gly Tyr Leu Gln Leu Ala Leu Cys Val Gly Phe
 180 185 190
 Ala Cys Leu Gly Thr Ala Leu Phe Val Gly Gly Leu Ala Gly Leu Arg
 195 200 205
 Thr His Ser Leu Ile Ala Gln Gly Ile Met Tyr Leu Tyr Leu Thr Tyr
 210 215 220
 Tyr Leu Ser Ser Ala Leu Glu Arg Asn Glu Thr Val Lys Asp Gln
 225 230 235 240
 Arg Asn Glu Ile Asn Thr Tyr Leu Thr Glu Glu Cys Arg Gln Gln Lys
 245 250 255
 Arg Glu Lys Ala Leu Leu Glu
 260

<210>280

<211>115

<212>PRT

<213>Chlamydia pneumoniae

<400>280

Asp Pro Cys Ser Ser Ser Trp Leu Phe Ser Ser Val Ser Gly Ser Arg
 1 5 10 15
 Ser Gly Ala Gly Arg Asp Val Gly Leu Asp Pro Glu Val Pro Gly Leu
 20 25 30
 Leu Ala Leu Phe Cys Ser Leu Gly Cys Pro Arg Arg Gly Leu Arg Ser
 35 40 45
 Ser Ile Pro Phe Ser Thr Phe Gly Val Asp Val Pro Gly Gly Leu Ala
 50 55 60
 Cys Ala Phe Ser Gly Ser Val Phe Gly Arg Thr Asn Gly Ser Tyr Ala
 65 70 75 80
 Asn Ile Asn Ser Ser Ser Glu Gly Ile Gly Asp Lys Gly Gly Val Gly
 85 90 95
 Phe Phe Gln Phe Gly Thr Lys Asp Phe Ile His Ser Gln Val Asp Val
 100 105 110
 Leu Leu Leu
 115

<210>281

<211>331

<212>PRT

<213>Chlamydia pneumoniae

<400>281

Val Ala Phe Arg Cys Val Met Thr Ile Asp Met His Cys Asp Leu Leu
 1 5 10 15
 Ser His Pro His Phe Cys Arg Lys Asp Pro Ala Val Arg Cys Ser Pro

20 25 30
 Glu Gln Leu Leu Ser Gly Gly Val Arg Gln Gln Val Cys Ala Ile Phe
 35 40 45
 Val Pro His Ser Arg Gly Glu Pro Asn Cys Asp Lys Gln Asn Ser Leu
 50 55 60
 Phe Phe Ser Leu Pro Asn Gln Tyr Pro Asp Ile Gly Leu Leu Ser Tyr
 65 70 75 80
 Glu Glu Glu Glu Asn Gly Ser Ser Ser Gln Lys Lys Ser Leu Ser Leu
 85 90 95
 Ile Arg Ser Ile Glu Asn Ala Ser Ala Leu Gly Asp Asp Thr Ala Pro
 100 105 110
 Leu Gly Thr Leu Leu Ala Lys Leu Ile His Leu Thr Lys Gln Gly Pro
 115 120 125
 Leu Ala Tyr Leu Gly Ile Val Trp Lys Gly Asp Asn Arg Phe Gly Gly
 130 135 140
 Gly Thr Glu Ala Pro Lys Arg Leu Ser Asn Asp Gly Lys Val Leu Leu
 145 150 155 160
 Asp Ile Met Tyr Glu Leu Gly Val Pro Ile Asp Leu Ser His Cys Ser
 165 170 175
 Asp Lys Leu Ala Glu Asp Ile Leu Asp Tyr Thr Ala Asp Lys Leu Pro
 180 185 190
 Asn Leu Ala Val Ile Ala Ser His Ser Asn Phe Arg Ser Val Leu Asp
 195 200 205
 His Arg Arg Asn Leu Val Asp Ala His Ala Lys Glu Ile Val Arg Arg
 210 215 220
 Lys Gly Val Ile Gly Leu Asn Leu Val Arg Ser Tyr Val Gly Asp Ser
 225 230 235 240
 Leu Gly Asp Leu Glu Lys His Val Leu His Ala Glu Asn Leu Gly Ile
 245 250 255
 Leu Ser Ser Ile Val Leu Gly Ser Asp Phe Phe Tyr Ala Asn Glu Asp
 260 265 270
 Glu Asn Phe Phe Phe Asn Glu Cys Ser Ser Ala Glu Ala His Pro Val
 275 280 285
 Leu Asn Gln Leu Ile His Arg Ile Phe Ser Lys Gly Lys Ala Glu Ser
 290 295 300
 Ile Leu Ser Ser Arg Ala Glu Lys Phe Leu Lys Gln Val Ile Val Glu
 305 310 315 320
 Gln Val Asn Pro Lys Ile Thr Asp Val Lys Leu
 325 330

<210>282

<211>218

<212>PRT

<213>Chlamydia pneumoniae

<400>282

Arg Ile Glu Asn Ile Ser Gly Tyr Pro Leu Ser Pro Thr Ala Lys Lys
 1 5 10 15
 Leu Ala Gln Leu Phe Pro Gly Ala Ile Thr Leu Val Val Lys His Arg
 20 25 30
 Asn Pro Arg Phe Pro Lys Glu Thr Leu Ala Phe Arg Ile Val Asp His
 35 40 45
 Ser Val Val Arg Glu Ile Val Asp His Cys Gly Thr Leu Ile Gly Thr
 50 55 60
 Ser Ala Asn Leu Ser Glu Phe Pro Ser Ala Leu Thr Ala Gln Glu Ile
 65 70 75 80
 Phe Ala Asp Phe Ala Asp His Asp Leu Cys Ile Phe Asp Gly Pro Cys
 85 90 95
 Ser His Gly Leu Glu Ser Thr Val Val Ala Ser Asp Pro Leu Tyr Ile
 100 105 110
 Tyr Arg Glu Gly Leu Ile Ser Arg Ser Val Ile Glu Asn Ile Ala Gly
 115 120 125
 Thr Glu Ala Lys Ile Phe His Arg Thr Ser His Ala Phe Ser Lys His
 130 135 140
 Ile Lys Ile Tyr Thr Val Lys Asn Gln Glu Gln Leu Val Ser Phe Leu
 145 150 155 160

Ser Gly Ser Leu Asp Phe Lys Gly Val Val Cys Glu His Pro Lys Pro
 165 170 175
 Lys Asn Phe Tyr Thr Arg Leu Arg Glu Ala Leu Lys Lys Lys Thr Pro
 180 185 190
 Ser Ile Val Phe Ile Tyr Asp Ile Asn Thr Ser Asp Tyr Pro Glu Leu
 195 200 205
 Phe Pro Phe Leu Ser Pro Tyr Tyr Ile Glu
 210 215

<210>283

<211>90

<212>PRT

<213>Chlamydia pneumoniae

<400>283

Ser Ile Phe Gly Val Ile Val Pro Asp Lys Lys Ala Gln Ile Thr Phe
 1 5 10 15
 Ser Leu Pro Glu Val Met Ser Ala Ile His Gln Gly Lys Ile Val Ala
 20 25 30
 Leu Pro Thr Asp Thr Val Tyr Gly Phe Val Leu Ser Leu Tyr Ala Ser
 35 40 45
 Glu Ala Glu Glu Arg Leu Tyr Ala Leu Lys Asp Arg Glu Pro Ser Lys
 50 55 60
 Ala Phe Ala Leu Tyr Val Asn Ser Ile Glu Glu Ser Lys Thr Phe Leu
 65 70 75 80
 Val Ile Pro Tyr Leu Leu Gln Leu Arg Asn
 85 90

<210>284

<211>243

<212>PRT

<213>Chlamydia pneumoniae

<400>284

Met Thr Asp Tyr Ser Phe Phe Arg Arg Lys Ile Gly Asn Ile Glu Ala
 1 5 10 15
 Ile Glu Cys Pro Gly Asn Pro Gln Asp Pro Ile Ile Ile Leu Cys His
 20 25 30
 Gly Tyr Gly Ser Leu Ala Asp Asn Leu Thr Phe Phe Pro Ser Ile Cys
 35 40 45
 Ser Phe Ser Lys Leu Arg Pro Thr Trp Ile Phe Pro Asn Gly Ile Leu
 50 55 60
 Pro Leu Glu Asn Asp Phe Arg Gly Ser Arg Ala Cys Phe Pro Leu Asn
 65 70 75 80
 Val Leu Leu Leu Gln Glu Leu Ser Arg Leu Tyr Ala Asn Gly Val Gly
 85 90 95
 Asn Leu Gln Glu Lys Tyr Asp Glu Leu Phe Asp Val Asp Leu Glu Thr
 100 105 110
 Pro Lys Glu Ala Leu Glu Glu Leu Ile Leu Asn Leu Asn Arg Pro Tyr
 115 120 125
 Asn Glu Ile Ile Ile Gly Gly Phe Ser Gln Gly Ala Ile Leu Ala Thr
 130 135 140
 His Leu Val Leu Thr Ser Gln Asn Pro Tyr Ala Gly Ala Leu Ile Phe
 145 150 155 160
 Ala Gly Ala Arg Leu Phe Asn Gln Gly Trp Glu Glu Gly Leu Lys Gln
 165 170 175
 Cys Ala Gln Val Pro Phe Leu Gln Ser His Gly Tyr Glu Asp Glu Ile
 180 185 190
 Leu Pro Tyr His Leu Gly Ala His Leu Asn Asp Leu Leu Leu Thr Lys
 195 200 205
 Leu Asn Gly Gln Phe Val Ser Phe His Gly Gly His Glu Ile Pro Ser
 210 215 220
 Val Val Phe Gln Lys Met Gln Val Thr Val Pro Asn Trp Ile Asp Pro
 225 230 235 240
 Ala Arg Gly

<210>285

<211>274

<212>PRT

<213>Chlamydia pneumoniae

<400>285

Phe Asn Arg Gln Ser Asp Ala Thr Tyr Ala Thr Trp Val Met His Leu
 1 5 10 15
 Glu Glu Glu Asn Gln Gly Trp Glu Ala Leu Leu Arg Lys Val Tyr His
 20 25 30
 Gln Glu Val Pro Pro Ala Ile Leu His Gly Phe Thr Leu Pro Val
 35 40 45
 Leu Gln Asp Lys Ala Glu Gln Leu Ala Ser Glu Ile Leu Leu Ser Ser
 50 55 60
 Ser Pro Gly Ser Glu His Lys Val Ser Gln Lys Ile His Pro Asp Ile
 65 70 75 80
 Tyr Gln Phe Phe Pro Glu Gly Lys Gly Arg Leu His Ser Ile Asp Leu
 85 90 95
 Pro Arg Gly Ile Lys Lys Gln Ile Tyr Ile Ser Pro Phe Glu Ala Asn
 100 105 110
 Tyr Lys Ile Tyr Ile Ile His Glu Ala Asp Arg Met Thr Leu Ala Ala
 115 120 125
 Ile Ser Ala Phe Leu Lys Val Phe Glu Glu Pro Pro Lys His Ala Val
 130 135 140
 Ile Ile Leu Thr Thr Ala Lys Val Gln Arg Leu Pro Lys Thr Ile Ile
 145 150 155 160
 Ser Arg Ser Leu Ser Ile Phe Ile Glu Arg Gly Glu Lys Ile Leu Cys
 165 170 175
 Ser Lys Glu Thr Phe Ser Tyr Leu Phe Arg Tyr Ala Gln Cys Glu Ile
 180 185 190
 Pro Val Thr Glu Val Ser Gln Ile Ile Lys Glu Ser Ser Glu Thr Asp
 195 200 205
 Lys Gln Val Leu Arg Asp Lys Val Gln Arg Phe Met Glu Val Leu Leu
 210 215 220
 Glu Leu Tyr Arg Asp Arg Tyr Thr Leu Asn Leu Gly Leu Lys Ala Ser
 225 230 235 240
 Ala Leu Asn Tyr Pro Glu His Val Lys Glu Ile Leu Gln Leu Pro Leu
 245 250 255
 Leu Pro Leu Asp Lys Val Leu Leu Ile Val Glu Ser Ala Trp Ser Val
 260 265 270
 Ile Glu

<210>286

<211>209

<212>PRT

<213>Chlamydia pneumoniae

<400>286

Gly Ser Ile Val Phe Ile Val Ile Glu Gly Gly Glu Gly Ser Gly Lys
 1 5 10 15
 Ser Ser Leu Ala Lys Ala Leu Gly Asp Gln Leu Val Ala Gln Asp Arg
 20 25 30
 Lys Val Leu Leu Thr Arg Glu Pro Gly Gly Cys Leu Ile Gly Glu Arg
 35 40 45
 Leu Arg Asp Leu Ile Leu Glu Pro Pro His Leu Glu Leu Ser Arg Cys
 50 55 60
 Cys Glu Leu Phe Leu Phe Leu Gly Ser Arg Ala Gln His Ile Gln Glu
 65 70 75 80
 Val Ile Ile Pro Ala Leu Arg Asp Gly Tyr Ile Val Ile Cys Glu Arg
 85 90 95
 Phe His Asp Ser Thr Ile Val Tyr Gln Gly Ile Ala Glu Gly Leu Gly
 100 105 110
 Ala Asp Phe Val Ala Asp Leu Cys Ser Lys Val Val Gly Pro Thr Pro
 115 120 125
 Phe Leu Pro Asn Phe Val Leu Leu Asp Ile Pro Ala Asp Ile Gly
 130 135 140
 Leu Gln Arg Lys His Arg Gln Lys Val Phe Asp Lys Phe Glu Lys Lys
 145 150 155 160

Pro Leu Ser Tyr His Asn Arg Ile Arg Glu Gly Phe Leu Ser Leu Ala
 165 170 175
 Ser Ala Asp Pro Ser Arg Tyr Leu Val Leu Asp Ala Arg Glu Ser Leu
 180 185 190
 Ala Ser Leu Ile Asp Lys Val Met Leu His Thr Gln Leu Gly Leu Cys
 195 200 205
 Thr

<210>287

<211>834

<212>PRT

<213>Chlamydia pneumoniae

<400>287

Met Phe Asn Lys Asp Glu Ile Ile Val Pro Lys Asn Leu Glu Glu Glu
 1 5 10 15
 Met Lys Glu Ser Tyr Leu Arg Tyr Ser Met Ser Val Ile Ile Ser Arg
 20 25 30
 Ala Leu Pro Asp Ile Arg Asp Gly Leu Lys Pro Ser Gln Arg Arg Val
 35 40 45
 Leu Tyr Ala Met Lys Gln Leu Ser Leu Ser Pro Gly Ala Lys His Arg
 50 55 60
 Lys Cys Ala Lys Ile Cys Gly Asp Thr Ser Gly Asp Tyr His Pro His
 65 70 75 80
 Gly Glu Ser Val Ile Tyr Pro Thr Leu Val Arg Met Ala Gln Asn Trp
 85 90 95
 Ala Met Arg Tyr Pro Leu Val Asp Gly Gln Gly Asn Phe Gly Ser Ile
 100 105 110
 Asp Gly Asp Pro Pro Ala Ala Met Arg Tyr Thr Glu Ala Arg Leu Thr
 115 120 125
 His Ser Ala Met Tyr Leu Met Glu Asp Leu Asp Lys Asp Thr Val Asp
 130 135 140
 Ile Val Pro Asn Tyr Asp Glu Thr Lys His Glu Pro Val Val Phe Pro
 145 150 155 160
 Ser Lys Phe Pro Asn Leu Leu Cys Asn Gly Ser Ser Gly Ile Ala Val
 165 170 175
 Gly Met Ala Thr Asn Ile Pro Pro His Asn Leu Gly Glu Leu Ile Glu
 180 185 190
 Ala Thr Leu Leu Leu Ala Asn Pro Gln Ala Ser Val Asp Glu Ile
 195 200 205
 Leu Gln Val Met Pro Gly Pro Asp Phe Pro Thr Gly Gly Ile Ile Cys
 210 215 220
 Gly Ser Glu Gly Ile Arg Ser Thr Tyr Thr Thr Gly Arg Gly Lys Ile
 225 230 235 240
 Lys Val Arg Ala Arg Leu His Val Glu Glu Asn Glu Asp Lys His Arg
 245 250 255
 Glu Ser Ile Ile Ile Thr Glu Met Pro Tyr Asn Val Asn Lys Ser Arg
 260 265 270
 Leu Ile Glu Gln Ile Ala Asn Leu Val Asn Glu Lys Thr Leu Ala Gly
 275 280 285
 Ile Ser Asp Val Arg Asp Glu Ser Asp Lys Asp Gly Ile Arg Val Val
 290 295 300
 Leu Glu Ile Lys Lys Gly Glu Ser Ser Glu Ile Ile Ile Asn Arg Leu
 305 310 315 320
 Tyr Lys Phe Thr Asp Val Gln Val Thr Phe Gly Ala Asn Met Leu Ala
 325 330 335
 Leu Asp Lys Asn Leu Pro Arg Thr Met Ser Ile His Arg Met Ile Ser
 340 345 350
 Ala Trp Ile Arg His Arg Lys Glu Val Ile Arg Arg Arg Thr Arg Tyr
 355 360 365
 Glu Leu Asn Lys Ala Glu Thr Arg Ala His Val Leu Glu Gly Tyr Leu
 370 375 380
 Lys Ala Leu Ser Cys Leu Asp Ala Leu Val Lys Thr Ile Arg Glu Ser
 385 390 395 400
 Gly Asn Lys Glu His Ala Lys Glu Arg Ile Ile Glu Ser Phe Gly Phe

405 410 415
 Thr Glu Pro Gln Ala Leu Ala Ile Leu Glu Leu Arg Leu Tyr Gln Leu
 420 425 430
 Thr Gly Leu Glu Ala Glu Lys Ile Gln Lys Glu Tyr Glu Glu Leu Leu
 435 440 445
 Asn Lys Ile Ala Tyr Tyr Lys Gln Val Leu Ser Asp Glu Gly Leu Val
 450 455 460
 Lys Asp Ile Ile Arg Asn Glu Leu Gln Asp Leu Leu Lys His His Lys
 465 470 475 480
 Val Ala Arg Arg Thr Thr Ile Glu Phe Asp Ala Asp Asp Ile Arg Asp
 485 490 495
 Ile Glu Asp Ile Ile Thr Asn Glu Ser Val Ile Ile Thr Ile Ser Gly
 500 505 510
 Asp Asp Tyr Val Lys Arg Met Pro Val Lys Val Phe Lys Glu Gln Arg
 515 520 525
 Arg Gly Gly His Gly Val Thr Gly Phe Asp Met Lys Lys Gly Ala Gly
 530 535 540
 Phe Leu Lys Ala Val Tyr Ser Ala Phe Thr Lys Asp Tyr Leu Leu Ile
 545 550 555 560
 Phe Thr Asn Phe Gly Gln Cys Tyr Trp Leu Lys Val Trp Gln Leu Pro
 565 570 575
 Glu Gly Glu Arg Arg Ala Lys Gly Lys Pro Ile Ile Asn Phe Leu Glu
 580 585 590
 Gly Ile Arg Pro Gly Glu Glu Leu Ala Ala Ile Leu Asn Ile Lys Asn
 595 600 605
 Phe Asp Asn Ala Gly Phe Leu Phe Leu Ala Thr Lys Arg Gly Val Val
 610 615 620
 Lys Lys Val Ser Leu Asp Ala Phe Ser Asn Pro Arg Lys Lys Gly Ile
 625 630 635 640
 Arg Ala Leu Glu Ile Asp Glu Gly Asp Glu Leu Ile Ala Ala Cys His
 645 650 655
 Ile Val Ser Asp Glu Glu Lys Val Met Leu Phe Thr His Leu Gly Met
 660 665 670
 Ala Val Arg Phe Pro His Glu Lys Val Arg Pro Met Gly Arg Thr Ala
 675 680 685
 Arg Gly Val Arg Gly Val Ser Leu Lys Asn Glu Glu Asp Lys Val Val
 690 695 700
 Ser Cys Gln Ile Val Thr Glu Asn Gln Ser Val Leu Ile Val Cys Asp
 705 710 715 720
 Gln Gly Phe Gly Lys Arg Ser Leu Val Glu Asp Phe Arg Glu Thr Asn
 725 730 735
 Arg Gly Gly Val Gly Val Arg Ser Ile Leu Ile Asn Glu Arg Asn Gly
 740 745 750
 Asn Val Leu Gly Ala Ile Pro Val Thr Asp His Asp Ser Ile Leu Leu
 755 760 765
 Met Ser Ser Gln Gly Gln Ala Ile Arg Ile Asn Met Gln Asp Val Arg
 770 775 780
 Val Met Gly Arg Ser Thr Gln Gly Val Arg Leu Val His Leu Lys Glu
 785 790 795 800
 Gly Asp Ala Leu Val Ser Met Glu Lys Leu Ser Ser Asn Glu Asn Asp
 805 810 815
 Asp Glu Val Leu Ser Gly Ser Glu Glu Cys Ser Asp Thr Val Ser
 820 825 830
 Leu Arg

<210>288

<211>789

<212>PRT

<213>Chlamydia pneumoniae

<400>288

Lys Gly Tyr Lys Leu Phe Val Ser Ala Pro Gly Cys Thr Leu Glu Ile
 1 5 10 15
 Arg Glu Ser Arg Val Phe Ile His Leu Val Tyr Glu Val Val Asp Asn
 20 25 30

Ser Ile Asp Glu Ala Met Ala Gly Tyr Cys Ser Arg Ile Asp Val Arg
 35 40 45
 Ile Leu Glu Asp Gly Gly Ile Val Ile Val Asp Asn Gly Arg Gly Ile
 50 55 60
 Pro Ile Glu Val His Glu Arg Glu Ser Ala Lys Gln Gly Arg Glu Val
 65 70 75 80
 Ser Ala Leu Glu Val Val Leu Thr Val Leu His Ala Gly Gly Lys Phe
 85 90 95
 Asp Lys Asp Ser Tyr Lys Val Ser Gly Gly Leu His Gly Val Gly Val
 100 105 110
 Ser Cys Val Asn Ala Leu Ser Glu Lys Leu Val Ala Thr Val Phe Lys
 115 120 125
 Asp Lys Lys Cys Tyr Gln Met Glu Phe Ser Arg Gly Ile Pro Val Thr
 130 135 140
 Pro Leu Gln Tyr Val Ser Val Ser Asp Arg Gln Gly Thr Glu Ile Val
 145 150 155 160
 Phe Tyr Pro Asp Pro Lys Ile Phe Ser Thr Cys Thr Phe Asp Arg Ser
 165 170 175
 Ile Leu Met Lys Arg Leu Arg Glu Leu Ala Phe Leu Asn Arg Gly Ile
 180 185 190
 Thr Ile Val Phe Glu Asp Asp Arg Asp Val Ser Phe Asp Lys Val Thr
 195 200 205
 Phe Phe Tyr Glu Gly Gly Ile Gln Ser Phe Val Ser Tyr Leu Asn Gln
 210 215 220
 Asn Lys Glu Ser Leu Phe Ser Glu Pro Ile Tyr Ile Cys Gly Thr Arg
 225 230 235 240
 Val Gly Asp Asp Gly Glu Ile Glu Phe Glu Ala Ala Leu Gln Trp Asn
 245 250 255
 Ser Gly Tyr Ser Glu Leu Val Tyr Ser Tyr Ala Asn Asn Ile Pro Thr
 260 265 270
 Arg Gln Gly Gly Thr His Leu Thr Gly Phe Ser Thr Ala Leu Thr Arg
 275 280 285
 Val Ile Asn Thr Tyr Ile Lys Ala His Asn Leu Ala Lys Asn Asn Lys
 290 295 300
 Leu Ala Leu Thr Gly Glu Asp Ile Arg Glu Gly Leu Thr Ala Val Ile
 305 310 315 320
 Ser Val Lys Val Pro Asn Pro Gln Phe Glu Gly Gln Thr Lys Gln Lys
 325 330 335
 Leu Gly Asn Ser Asp Val Ser Ser Val Ala Gln Gln Val Val Gly Glu
 340 345 350
 Ala Leu Thr Ile Phe Phe Glu Glu Asn Pro Gln Ile Ala Arg Met Ile
 355 360 365
 Val Asp Lys Val Phe Val Ala Gln Ala Arg Glu Ala Ala Lys Lys
 370 375 380
 Ala Arg Glu Leu Thr Leu Arg Lys Ser Ala Leu Asp Ser Ala Arg Leu
 385 390 395 400
 Pro Gly Lys Leu Ile Asp Cys Leu Glu Lys Asp Pro Glu Lys Cys Glu
 405 410 415
 Met Tyr Ile Val Glu Gly Asp Ser Ala Gly Gly Ser Ala Lys Gln Gly
 420 425 430
 Arg Asp Arg Arg Phe Gln Ala Ile Leu Pro Ile Arg Gly Lys Ile Leu
 435 440 445
 Asn Val Glu Lys Ala Arg Leu Gln Lys Ile Phe Gln Asn Gln Glu Ile
 450 455 460
 Gly Thr Ile Ile Ala Ala Leu Gly Cys Gly Ile Gly Ala Asp Asn Phe
 465 470 475 480
 Asn Leu Ser Lys Leu Arg Tyr Arg Arg Ile Ile Ile Met Thr Asp Ala
 485 490 495
 Asp Val Asp Gly Ser His Ile Arg Thr Leu Leu Leu Thr Phe Phe Tyr
 500 505 510
 Arg His Met Thr Ala Leu Ile Glu Asn Glu Cys Val Tyr Ile Ala Gln
 515 520 525
 Pro Pro Leu Tyr Lys Val Ser Lys Lys Lys Asp Phe Arg Tyr Ile Leu
 530 535 540

Ser Glu Lys Glu Met Asp Ser Tyr Leu Leu Met Leu Gly Thr Asn Glu
 545 550 555 560
 Ser Ser Ile Leu Phe Lys Ser Thr Glu Arg Glu Leu Arg Gly Glu Ala
 565 570 575
 Leu Glu Ser Phe Ile Asn Val Ile Leu Asp Val Glu Ser Phe Ile Asn
 580 585 590
 Thr Leu Glu Lys Lys Ala Ile Pro Phe Ser Glu Phe Leu Glu Met Tyr
 595 600 605
 Lys Glu Gly Ile Gly Tyr Pro Leu Tyr Tyr Leu Ala Pro Ala Thr Gly
 610 615 620
 Met Gln Gly Gly Arg Tyr Leu Tyr Ser Asp Glu Glu Lys Glu Glu Ala
 625 630 635 640
 Leu Ala Gln Glu Glu Thr His Lys Phe Lys Ile Ile Glu Leu Tyr Lys
 645 650 655
 Val Ala Val Phe Val Asp Ile Gln Asn Gln Leu Lys Glu Tyr Gly Leu
 660 665 670
 Asp Ile Ser Ser Tyr Leu Ile Pro Gln Lys Asn Glu Ile Val Ile Gly
 675 680 685
 Asn Glu Asp Ser Pro Ser Cys Asn Tyr Ser Cys Tyr Thr Leu Glu Glu
 690 695 700
 Val Ile Asn Tyr Leu Lys Asn Leu Gly Arg Lys Gly Ile Glu Ile Gln
 705 710 715 720
 Arg Tyr Lys Gly Leu Gly Glu Met Asn Ala Asp Gln Leu Trp Asp Thr
 725 730 735
 Thr Met Asn Pro Glu Gln Arg Thr Leu Ile His Val Ser Leu Lys Asp
 740 745 750
 Ala Val Glu Ala Asp His Ile Phe Thr Met Leu Met Gly Glu Glu Val
 755 760 765
 Pro Pro Arg Arg Glu Phe Ile Glu Ser His Ala Leu Ser Ile Arg Ile
 770 775 780
 Asn Asn Leu Asp Ile
 785

<210>289

<211>116

<212>PRT

<213>Chlamydia pneumoniae

<400>289

Asp Met Phe Leu Lys Arg Lys Lys Arg Gly Gly Ser Gln Val Gln Asn
 1 5 10 15
 Lys Gly Thr Ala Ser Pro Ile Lys His Ala Lys His Tyr Leu His Asn
 20 25 30
 Tyr Leu Gln Glu Leu Gln Lys Ile Met Ala Ala Arg Pro His Asp Ala
 35 40 45
 Ile Asp Ala Trp Asn Gln Val Phe Arg Asp Lys Tyr Lys Gly Met Ser
 50 55 60
 Gln Ala Ile Gly Phe Arg Asp His Ile Leu Leu Val Lys Val Tyr Asn
 65 70 75 80
 Ser Ser Leu Tyr Ala Leu Leu Lys Gln Thr Pro Gln Asn Asp Leu Ile
 85 90 95
 Met Ser Leu Tyr Gln Val Ala Ser His Val Gln Ile Arg Glu Ile Gln
 100 105 110
 Phe Leu Leu Gly
 115

<210>290

<211>200

<212>PRT

<213>Chlamydia pneumoniae

<400>290

Asn Ile Ser Ile Phe Tyr Pro Lys Tyr Phe Ile Glu Gly Lys Glu Val
 1 5 10 15
 Leu Ile Lys Asn Leu Pro Pro Leu Ile Phe Tyr Gly Val Ile Leu Met
 20 25 30
 Ile Ile Asn Val Arg Ala Pro Ala Phe Gly Ile Thr Ser Val Gln Gln
 35 40 45

Phe Ser Thr Asn Phe Gln Ala Ala Ile Pro Ile Leu Asn Ile Val Ile
 50 55 60
 Gly Cys Ser Arg Ile Ser Thr Tyr Ala Glu Asp Ile Glu Glu Val
 65 70 75 80
 Ala Gln Glu Lys Leu Glu Lys Ser Thr His Ser Lys Ser Ser Thr Ser
 85 90 95
 Val Asn Leu Trp Ala His Arg Val Arg Gly Val Val Glu Ile Leu Gly
 100 105 110
 Gly Gly Ile Val Ile Leu Ala Leu Glu Ile Thr Ala Leu Val Leu Gln
 115 120 125
 Val Ile Ile Lys Leu Ile Lys Cys Leu Ile Asp Val Leu Cys Val Cys
 130 135 140
 Leu Phe Gly Leu Gly Val Cys Val Val Ala Ile Ile Gly Ala Ile Ala
 145 150 155 160
 Phe Cys Val Val Val Val Val Lys Tyr Leu Gly Phe Cys Ser Gln Gly
 165 170 175
 Glu Glu Leu Glu Pro Ile Glu Val Lys Thr Leu Ile Ser Pro Asp Lys
 180 185 190
 Pro Tyr Pro Thr Val Val Tyr Val
 195 200

<210>291

<211>275

<212>PRT

<213>Chlamydia pneumoniae

<400>291

Arg Asp Ser Met Lys Lys Lys Leu Ser Leu Leu Val Gly Leu Ile Phe
 1 5 10 15
 Val Leu Ser Ser Cys His Lys Glu Asp Ala Gln Asn Lys Ile Arg Ile
 20 25 30
 Val Ala Ser Pro Thr Pro His Ala Glu Leu Leu Glu Ser Leu Gln Glu
 35 40 45
 Glu Ala Lys Asp Leu Gly Ile Lys Leu Lys Ile Leu Pro Val Asp Asp
 50 55 60
 Tyr Arg Ile Pro Asn Arg Leu Leu Leu Asp Lys Gln Val Asp Ala Asn
 65 70 75 80
 Tyr Phe Gln His Gln Ala Phe Leu Asp Asp Glu Cys Glu Arg Tyr Asp
 85 90 95
 Cys Lys Gly Glu Leu Val Val Ile Ala Lys Val His Leu Glu Pro Gln
 100 105 110
 Ala Ile Tyr Ser Lys Lys His Ser Ser Leu Glu Arg Leu Lys Ser Gln
 115 120 125
 Lys Lys Leu Thr Ile Ala Ile Pro Val Asp Arg Thr Asn Ala Gln Arg
 130 135 140
 Ala Leu His Leu Leu Glu Glu Cys Gly Leu Ile Val Cys Lys Gly Pro
 145 150 155 160
 Ala Asn Leu Asn Met Thr Ala Lys Asp Val Cys Gly Lys Glu Asn Arg
 165 170 175
 Ser Ile Asn Ile Leu Glu Val Ser Ala Pro Leu Leu Val Gly Ser Leu
 180 185 190
 Pro Asp Val Asp Ala Ala Val Ile Pro Gly Asn Phe Ala Ile Ala Ala
 195 200 205
 Asn Leu Ser Pro Lys Lys Asp Ser Leu Cys Leu Glu Asp Leu Ser Val
 210 215 220
 Ser Lys Tyr Thr Asn Leu Val Val Ile Arg Ser Glu Asp Val Gly Ser
 225 230 235 240
 Pro Lys Met Ile Lys Leu Gln Lys Leu Phe Gln Ser Pro Ser Val Gln
 245 250 255
 His Phe Phe Asp Thr Lys Tyr His Gly Asn Ile Leu Thr Met Thr Gln
 260 265 270
 Asp Asn Gly
 275

<210>292

<211>221

<212>PRT

<213>Chlamydia pneumoniae

<400>292

Met Gln Ser Asp Leu Ile Gln Ile Leu Leu Lys Glu Thr Val Asn Thr
 1 5 10 15
 Leu Tyr Met Val Ser Thr Ala Phe Phe Ser Cys Ala Ile Gly Gly
 20 25 30
 Met Leu Gly Leu Gly Leu Phe Cys Thr Ser Pro Lys Ser Leu Asn Pro
 35 40 45
 Lys Lys Ser Leu Tyr Ala Thr Ile Ser Met Ile Leu Ser Phe Leu Thr
 50 55 60
 Ala Ile Pro Phe Ala Ile Leu Ile Val Ile Leu Phe Pro Ile Thr Arg
 65 70 75 80
 Trp Ile Val Gly Thr Ser Leu Gly Pro Thr Ala Ser Ile Val Pro Leu
 85 90 95
 Thr Ile Gly Ala Ile Pro Phe Val Val Thr Ile Val Val Asp Ala Phe
 100 105 110
 Arg Asn Ser Ala Leu Asn Tyr Leu Glu Ser Ala Val Ala Leu Gly Ile
 115 120 125
 Pro Lys Arg Asn Ile Leu Phe Gly Ile Leu Leu Pro Glu Ser Tyr Pro
 130 135 140
 Gln Leu Ile Phe Ser Leu Lys Ser Leu Val Val His Leu Ile Ser Cys
 145 150 155 160
 Ser Thr Leu Ala Gly Phe Val Gly Gly Gly Leu Gly Gln Leu Leu
 165 170 175
 Leu Gln Tyr Gly Tyr Tyr Arg Phe Glu Trp Ser Val Thr Thr Ser Val
 180 185 190
 Leu Val Ile Thr Leu Val Leu Ile Glu Ser Val Arg Ile Leu Gly Asp
 195 200 205
 Phe Trp Gly Arg Arg Val Leu Lys Tyr Arg Gly Ile Leu
 210 215 220

<210>293

<211>341

<212>PRT

<213>Chlamydia pneumoniae

<400>293

Val Ser Glu Gln His Ser Pro Ile Ile Ser Val Gln Asp Val Ser Lys
 1 5 10 15
 Lys Leu Gly Asp His Ile Leu Leu Ser Lys Val Ser Phe Ser Val Tyr
 20 25 30
 Pro Gly Glu Val Phe Gly Ile Val Gly His Ser Gly Ser Gly Lys Thr
 35 40 45
 Thr Leu Leu Arg Cys Leu Asp Phe Leu Asp Met Pro Thr Ser Gly Ser
 50 55 60
 Ile Ser Val Ala Gly Phe Asp Asn Ser Leu Pro Thr Gln Lys Phe Ser
 65 70 75 80
 Arg Arg Asn Phe Ser Lys Lys Val Ala Tyr Ile Ser Gln Asn Tyr Gly
 85 90 95
 Leu Phe Ser Ser Lys Thr Val Phe Glu Asn Ile Ala Tyr Pro Leu Arg
 100 105 110
 Ile His His Ser Glu Met Ser Lys Ser Glu Val Glu Glu Gln Val Tyr
 115 120 125
 Asp Thr Leu Asn Phe Leu Asn Leu Tyr His Arg His Asp Ala Tyr Pro
 130 135 140
 Gly Asn Leu Ser Gly Gly Gln Lys Gln Glu Val Ala Ile Ala Arg Ala
 145 150 155 160
 Ile Val Cys Gln Pro Glu Val Val Leu Cys Asp Glu Ile Thr Ser Ala
 165 170 175
 Leu Asp Pro Lys Ser Thr Glu Asn Ile Ile Glu Arg Leu Leu Gln Leu
 180 185 190
 Asn Gln Glu Arg Gly Ile Thr Leu Val Leu Val Ser His Glu Ile Asp
 195 200 205
 Val Val Lys Lys Ile Cys Ser His Val Leu Val Met His Gln Gly Ala
 210 215 220
 Val Glu Glu Leu Gly Thr Thr Glu Glu Leu Phe Leu Asn Ser Glu Asn

225 230 235 240
 Ser Ile Thr Asn Glu Leu Phe His Glu Asp Ile Asn Ile Ala Ala Leu
 245 250 255
 Ser Ser Cys Tyr Phe Ala Glu Asp Arg Glu Glu Val Leu Arg Leu Asn
 260 265 270
 Phe Ser Lys Glu Leu Ala Ile Gln Gly Ile Ile Ser Lys Val Ile Gln
 275 280 285
 Thr Gly Leu Val Ser Ile Asn Ile Leu Ser Gly Asn Ile Asn Leu Phe
 290 295 300
 Arg Lys Ser Pro Met Gly Phe Leu Ile Ile Val Leu Glu Gly Glu Val
 305 310 315 320
 Glu Gln Arg Lys Lys Ala Lys Glu Leu Leu Ile Glu Leu Gly Val Val
 325 330 335
 Ile Lys Glu Phe Tyr
 340
 <210>294
 <211>357
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>294
 Ile Ser Leu Arg Arg His Thr Leu Met Leu Asn Ile His Asp Ile Leu
 1 5 10 15
 Gly Asn Asp Asp Glu Asn Leu Leu Ser Tyr Gln Cys Lys His Ile Thr
 20 25 30
 Lys Asp Lys Leu Thr Leu Pro Ser His Asp Phe Val Asp Lys Val Phe
 35 40 45
 Gly Leu Ser Asp Arg Asn Asn Arg Val Leu Arg Ser Leu Gln Thr Met
 50 55 60
 Phe Ser His Gly Arg Leu Ala Asn Ser Gly Tyr Leu Ser Ile Leu Pro
 65 70 75 80
 Val Asp Gln Gly Ile Glu His Ser Ala Gly Ala Ser Phe Ala Ile Asn
 85 90 95
 Pro Ile Tyr Phe Asp Pro Glu Asn Ile Val Lys Leu Ala Ile Glu Ser
 100 105 110
 Gly Cys Ser Ala Val Ala Ser Thr Tyr Gly Thr Leu Ser Leu Ser
 115 120 125
 Arg Lys Tyr Ala His Lys Ile Pro Phe Met Leu Lys Leu Asn His Asn
 130 135 140
 Glu Leu Leu Ser Tyr Pro Thr Lys Tyr His Gln Ile Phe Phe Thr Gln
 145 150 155 160
 Val Glu Ala Ala Tyr Ser Met Gly Ala Val Ala Val Gly Ala Thr Val
 165 170 175
 Tyr Phe Gly Ser Glu Thr Ser Asn Glu Glu Ile Val Ala Val Ser Asn
 180 185 190
 Ala Phe Ala Lys Ala Arg Ser Leu Gly Leu Ala Thr Val Leu Trp Cys
 195 200 205
 Tyr Leu Arg Asn Pro Ala Phe Val Ala Asn Gly Val Asp Tyr His Thr
 210 215 220
 Ala Ala Asp Leu Thr Gly Gln Ala Asp His Leu Gly Ala Thr Leu Gly
 225 230 235 240
 Ala Asp Ile Val Lys Gln Lys Leu Pro Thr Cys Gln Gly Gly Phe Lys
 245 250 255
 Ala Ile Asn Phe Gly Lys Thr Asp Glu Arg Val Tyr Ser Glu Leu Ser
 260 265 270
 Ser Asn His Pro Ile Asp Leu Cys Arg Tyr Gln Val Leu Asn Ser Tyr
 275 280 285
 Cys Gly Lys Val Gly Leu Ile Asn Ser Gly Gly Pro Ser Gly Lys Asn
 290 295 300
 Asp Phe Thr Glu Ala Ala Arg Thr Ala Val Ile Asn Lys Arg Ala Gly
 305 310 315 320
 Gly Met Gly Leu Ile Leu Gly Arg Lys Ala Phe Gln Arg Pro Leu Ser
 325 330 335
 Glu Gly Ile Gln Leu Leu Asn Leu Val Gln Asp Ile Tyr Leu Asp Pro
 340 345 350

Asn Ile Thr Ile Ala
 355
 <210>295
 <211>468
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>295
 Met His Ser His Ser Lys Pro Thr Lys Pro Leu Gly Thr Phe Thr Val
 1 5 10 15
 Gly Met Leu Ser Leu Ala Val Val Ile Ser Leu Arg Asn Leu Pro Leu
 20 25 30
 Thr Ala Lys His Gly Leu Ser Thr Leu Phe Phe Tyr Gly Leu Ala Val
 35 40 45
 Ile Cys Phe Met Ile Pro Tyr Ala Leu Ile Ser Ala Glu Leu Ala Ser
 50 55 60
 Phe Lys Pro Gln Gly Ile Tyr Ile Trp Ala Arg Asp Ala Leu Gly Lys
 65 70 75 80
 Trp Trp Gly Phe Phe Ala Ile Trp Met Gln Trp Phe His Asn Met Thr
 85 90 95
 Trp Tyr Pro Ala Val Leu Ala Phe Ile Ala Ser Thr Ile Val Tyr Lys
 100 105 110
 Ile Asn Pro Glu Leu Ala His Asn Lys Val Tyr Ile Ala Thr Val Ile
 115 120 125
 Leu Ala Gly Phe Trp Ile Leu Thr Phe Phe Asn Phe Leu Gly Ile Thr
 130 135 140
 Ser Ser Ala Leu Phe Ser Ser Ile Cys Val Ile Ile Gly Thr Leu Ile
 145 150 155 160
 Pro Gly Val Ile Leu Val Ser Leu Ala Leu Phe Trp Ile Phe Ser Gly
 165 170 175
 Asn Pro Ile Ala Ile Ser Leu Ser Trp Gly Asn Leu Leu Pro Asn Phe
 180 185 190
 Ser Asn Val Ser Ser Leu Val Leu Leu Ala Gly Met Leu Leu Ala Leu
 195 200 205
 Cys Gly Leu Glu Ala Asn Ala Asn Leu Ala Ser Asp Met Val Asn Pro
 210 215 220
 Arg Lys Asn Tyr Pro Lys Ala Val Phe Ile Gly Ala Ile Ala Thr Leu
 225 230 235 240
 Thr Ile Leu Val Leu Gly Ser Leu Ser Ile Ala Ile Val Ile Pro Lys
 245 250 255
 Glu Glu Ile Ser Leu Val Ser Gly Leu Val Lys Thr Phe Thr Leu Phe
 260 265 270
 Phe Asp Lys Tyr Asn Leu Ser Trp Met Thr Gly Ile Val Val Met
 275 280 285
 Thr Ile Ala Gly Ser Leu Gly Glu Leu Asn Ala Trp Met Phe Ala Gly
 290 295 300
 Thr Lys Gly Leu Phe Ile Ser Thr Gln Asn Asp Cys Leu Pro Arg Leu
 305 310 315 320
 Phe Lys Lys Val Asn Ser Lys Asn Val Pro Thr Asn Leu Met Leu Phe
 325 330 335
 Gln Gly Ile Val Thr Ile Phe Thr Leu Leu Phe Leu Cys Leu Asp
 340 345 350
 Ser Ala Asp Leu Val Tyr Trp Ile Leu Thr Ala Leu Ser Val Gln Met
 355 360 365
 Tyr Leu Ala Met Tyr Ile Cys Leu Phe Leu Ala Gly Pro Ile Leu Arg
 370 375 380
 Ile Lys Glu Pro Arg Ala Gln Arg Leu Tyr Ser Val Pro Gly Lys Phe
 385 390 395 400
 Leu Gly Ile Cys Thr Met Ser Ile Leu Gly Ile Leu Ser Cys Ala Phe
 405 410 415
 Ala Leu Trp Val Ser Phe Leu Pro Pro Arg Glu Leu Ala Gln Ile Ser
 420 425 430
 Glu Gly Ser Lys Ile Gly Tyr Thr Phe Leu Leu Leu Ala Phe Ser
 435 440 445
 Leu Asn Cys Leu Ile Pro Phe Gly Ile Tyr Phe Thr His Lys Arg Leu

450
 Ser Lys Lys Ser
 465
 <210>296
 <211>209
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>296
 Arg Gly Ala Lys Phe Cys Arg Thr Lys Lys Tyr Ile Thr Pro Phe Leu
 1 5 10 15
 His His Leu Phe Glu Gly Asp Glu Val Ala Leu Leu Asn Gln Leu Ser
 20 25 30
 Leu Arg Leu Asp Leu Ile Val Pro Asn Ala Leu Tyr Pro Glu Pro Asp
 35 40 45
 Pro Ser Cys Trp Gln Ser Ile Asn Ser Glu Asp Cys Ala Lys Asp Ala
 50 55 60
 Glu Asp Gln Gln Glu Asp Phe Asn Lys Thr Lys Glu Ala Cys Lys Glu
 65 70 75 80
 Gly Leu Lys Lys Leu Val Leu Pro Ala Leu Ser Ile Thr Ser Ile Pro
 85 90 95
 Gln Leu Leu Arg Ala Arg Arg Phe Lys Gln Gly Ala Glu Ile Leu Met
 100 105 110
 Ala Ile Asp Arg Lys Lys Met Lys Gln Asn Pro Phe Ile Phe Leu Glu
 115 120 125
 Ala Leu Leu Glu Ser Glu Glu Phe Ser Ile Ser Val Gly Lys Tyr Leu
 130 135 140
 Lys Leu Leu Met Pro Ile His Leu Trp Asp Lys Leu Leu His Ala Ile
 145 150 155 160
 Tyr Leu Gly Tyr Phe Gln Thr Gly Leu Ile Cys Gln Gly Glu Ile Glu
 165 170 175
 Thr Phe Cys Arg Arg Ala Asn Leu Asn Pro Glu Ala Phe Gln Ala Ala
 180 185 190
 Ile Gln Gln Gly Arg Leu Leu Ser Phe Leu Phe Pro Lys Met Leu Leu
 195 200 205
 Asp
 <210>297
 <211>168
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>297
 Phe Leu Asp Met Asn Ile Pro Ala Pro Gln Val Pro Val Ile Asp Glu
 1 5 10 15
 Pro Val Val Asn Asn Thr Ser Ser Tyr Gly Leu Ser Leu Lys Ser Ser
 20 25 30
 Leu Arg Pro Ile Thr Tyr Leu Ile Leu Ala Ile Leu Ala Ile Ala Thr
 35 40 45
 Leu Met Ser Val Leu Tyr Phe Cys Gly Ile Ile Ser Val Gly Thr Phe
 50 55 60
 Val Leu Gly Met Leu Ile Pro Leu Ser Val Cys Ser Val Leu Cys Val
 65 70 75 80
 Ala Tyr Leu Phe Tyr Gln Gln Ser Ser Ile Glu Lys Thr Lys Val Phe
 85 90 95
 Ser Ile Thr Ser Pro Ser Val Phe Phe Ser Asp Glu Asp Leu Asn Leu
 100 105 110
 Leu Leu Gly Arg Glu Glu Asp Ser Val Ser Ala Ile Asp Glu Leu Leu
 115 120 125
 Lys Asn Phe Pro Ala Asp Asp Phe Arg Arg Pro Lys Met Leu Pro Tyr
 130 135 140
 Ser Asn Phe Leu Asp Glu Gln Gly Arg Pro Asn Glu Ser Arg Glu Glu
 145 150 155 160
 Asp Ser His Thr Ser Lys Ile Leu
 165
 <210>298

<211>517

<212>PRT

<213>Chlamydia pneumoniae

<400>298

Lys Glu Leu Phe Asn Leu Phe Phe Phe Thr Ala Asn Lys Glu Thr Thr
 1 5 10 15
 Ala Ser His Glu Leu Ile Tyr Arg Lys Asn Gln Ser Phe Ser Leu Ser
 20 25 30
 Pro Val Thr Ile Leu Cys Leu Leu Ala Ile Ser Val Leu Leu Leu
 35 40 45
 Gly Val Val Phe Ala Leu Val Gly Cys His Val Leu Ala Ala Pro Leu
 50 55 60
 Gly Leu Leu Val Trp Gly Cys Ala Ala Ser Val Cys Ser Met Met Ala
 65 70 75 80
 Ile Val Ser Leu Met Cys Leu Tyr Lys Gly Gly Lys Pro Leu Ile Glu
 85 90 95
 Pro Ser Asn Glu Lys Ile Asp Pro Thr Lys Asp Leu Glu Ile Lys
 100 105 110
 Asp Pro Glu Ser Leu Lys Pro Val Pro Val Glu Gly Gln Ser Leu Pro
 115 120 125
 Lys Glu Arg Lys Thr Val Ser Phe Lys Ala Lys Ile Pro Ser Ile Val
 130 135 140
 Glu Asp Asp Phe Lys Pro Tyr Val Ile Gln Ser Thr Phe Tyr His Gln
 145 150 155 160
 Asn Lys Val Tyr Ser Lys Pro Ile Ala Glu Arg Met Gln Ser Leu Glu
 165 170 175
 Lys Glu Ile Thr Thr Leu Ile Val Asp Phe Pro Arg Ala Leu Glu Glu
 180 185 190
 Ser Ser Lys Ser Ser Gly Ser Leu Leu Arg Gly Val Ile Ser Glu Ile
 195 200 205
 Lys Asn Leu Phe Leu Pro Arg Phe Leu Ser Arg Lys Val Lys Tyr Ser
 210 215 220
 Leu Thr Ala Cys Leu Arg Arg Leu Gly Ser Ile Val Glu Glu Tyr Ala
 225 230 235 240
 Ser Ser Asp Leu Leu Ile Leu Leu Leu Thr Lys Pro Glu Pro Leu Asn
 245 250 255
 Met Val Thr Gln Gln Leu Ile Ala His Leu Asn Ser Leu Lys Thr Glu
 260 265 270
 Lys Arg Lys Leu Thr Pro His Met Gln Lys Leu Val Leu Ser Ile Asn
 275 280 285
 Phe Trp Phe Tyr Gly Trp Ser Leu Glu Glu Lys Cys Ile Glu Lys Ile
 290 295 300
 Val Ala Tyr Asp Pro Asn Leu Leu Thr Asp Glu Leu Lys Ala His Leu
 305 310 315 320
 Glu Ala Gly Asn Ile Val Gln Phe Leu Leu Ser Phe Gln Ser Ser Glu
 325 330 335
 Met Gln Arg Glu Phe Arg Ala Leu Phe Pro Ser Asp Ala Gln Glu Leu
 340 345 350
 Pro Ser Ala Lys Asp Gly Ser Asn Tyr Val Pro Ala Ile Asn Ser Ser
 355 360 365
 Glu Tyr Met Tyr Asp Phe Lys Asp Leu Ser Val Leu Lys Lys Ser Leu
 370 375 380
 Ser Glu Arg Leu Ala Phe Cys Glu Lys Ile Pro Ser Pro Ser Ser Trp
 385 390 395 400
 Asn Phe Thr Ser Ser Val Ala Ser His Tyr Lys Asp Phe Ser Leu Leu
 405 410 415
 Phe Thr Phe Phe Ser Asn Gln Gln Ser Val Ile Leu Gln Asn Pro Phe
 420 425 430
 Leu Leu Ile Glu Leu Leu His Glu Asn Pro Lys Cys Gln Thr Phe Leu
 435 440 445
 Lys Gly Leu Leu Glu Lys Ala Met Pro Met Ser Asn Trp Ala Ala Leu
 450 455 460
 Phe Arg Pro Met Leu Met Gly Met Leu Cys Ser Gly Ile Ala Arg Lys
 465 470 475 480

РСТ/ЛВ98/01890

532

420 425 430
 Gln Leu Gly Val Thr Val Ala Thr Gly Val Leu Gly Ala Ser Leu Thr
 435 440 445
 Ala Thr Thr Leu Gly Val Leu Ser Pro Phe Phe Phe Ala Lys Leu Gly
 450 455 460
 Val Asp Pro Ala Leu Ala Ser Gly Pro Ile Val Thr Ala Leu Asn Asp
 465 470 475 480
 Ile Met Ser Met Ile Ile Phe Phe Leu Ile Ala Gly Gly Ile Asn Phe
 485 490 495
 Leu Phe Phe Asn
 500
 <210>300
 <211>714
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>300
 Arg Arg Cys Met Ile Arg Ser Pro Leu Pro Phe Ile Ser Ser Lys Arg
 1 5 10 15
 Ala Leu Asn Met Leu Gly Leu Gln Asp Glu Phe Ser Cys Pro Glu Asp
 20 25 30
 Val Val Asp Phe Leu Phe Ser Glu Ile Glu Leu Leu Ala Gln Gln Asp
 35 40 45
 Glu Pro Ser Glu Gly Tyr Leu Ala Leu Ser Arg Ser Leu Leu Met Met
 50 55 60
 Thr His Asn His Pro Lys Val Val Lys Arg Val Ile Phe Tyr Gly Val
 65 70 75 80
 Ser Tyr Gly Leu Lys His Lys Ser Met Ser Ile Phe Ile Asp Val Leu
 85 90 95
 Thr Tyr Ile Asp Phe Leu Phe Glu Lys Leu Gly Ile Ser Ala Ser Asp
 100 105 110
 Arg Leu Ser Leu Cys Ser Ala Arg Thr Cys Ile Asn Phe Glu Leu Tyr
 115 120 125
 Ser Gln Thr Gly Glu Met Lys Phe Leu Ser Glu Val Val Asp Asn Phe
 130 135 140
 Arg Leu Ile Glu Gln Leu Leu Lys Met His Pro Gln Leu Lys Asn Arg
 145 150 155 160
 Phe Gly Trp Glu His Phe Arg Ile Gly Ala Lys Gln Glu Glu Val Ser
 165 170 175
 Leu Val Ala Ser Ala Ser Val Tyr Gln Ala Val Gly Arg Ser Phe Ile
 180 185 190
 Glu Leu Tyr His Lys His Leu Glu Leu Ser Asp Leu Ala Cys Gly Met
 195 200 205
 Lys Cys Leu Ala Leu Ala Leu Asp Leu Ser Pro Asn Asn Ala His Ile
 210 215 220
 His Ala Asp Tyr Ala Lys Gly Leu Val Val Leu Gly Thr Arg Gln Gly
 225 230 235 240
 Lys Ser Leu Leu Ile Glu Arg Gly Met Glu His Phe Ser Lys Ala Ile
 245 250 255
 Phe Leu Ser Phe Ser Arg Asp Gly Asp Thr Leu Ala Tyr Gln Asn Tyr
 260 265 270
 Arg Tyr Ser Tyr Ala Leu Ala Ser Val Lys Leu Phe Asp Leu Thr Tyr
 275 280 285
 Lys Lys Glu His Phe Asp Gln Ala Met Asn Ile Leu Tyr Gln Thr Val
 290 295 300
 Gln Ala Phe Pro Asn Leu Ser Gly Leu Trp Met Val Trp Gly Glu Leu
 305 310 315 320
 Leu Ile Arg Ser Gly Trp Leu Asn Ser Asn Met Lys Tyr Ile Glu Val
 325 330 335
 Gly Leu Glu Lys Leu Ala Ser Leu Gln Lys Lys Thr Asn Asp Pro Ile
 340 345 350
 Ala Leu Ser Gly Leu Leu Ala Thr Gly Ile Ala Ile Leu Gly Leu Tyr
 355 360 365
 Leu Glu Glu Pro Asn Leu Phe Lys Asp Ser Arg His Arg Leu Ile Ser
 370 375 380

Ala Met Arg Met Phe Pro Gly Asn Ser Ala Leu Val His Ala Leu Gly
 385 390 395 400
 Val Val Gln Leu Cys Ser Ala Leu Tyr Phe Asn Glu Asp Ser His Phe
 405 410 415
 Ala Ser Ala Ile Ser Cys Phe Gln Ser Cys Leu Glu Trp Asp Leu Asp
 420 425 430
 Ala Thr Gly Met Trp Gln Lys Leu Phe Asp Ala Tyr Phe Ser Trp Gly
 435 440 445
 Ile Lys Lys Lys Ser Ala Arg Leu Leu Arg Lys Ala Val Asp Val Ala
 450 455 460
 Ser Arg Leu Cys Ser Leu Arg Pro Glu Ala Phe Leu Phe Trp Ser Asp
 465 470 475 480
 Arg Gly Leu Ala Leu Lys Cys Leu Ala Glu Ala Thr Ile Asp Glu Ala
 485 490 495
 Tyr Lys Glu Ile Phe Leu Ser Glu Ser Leu Leu His Tyr Gln Arg Ala
 500 505 510
 Trp Asp Leu Ser Gly Arg Leu Glu Ile Leu Glu Leu Trp Gly Gln Ser
 515 520 525
 His Tyr Leu Leu Ala Glu Leu Gln Gln Ser Leu Phe His Tyr Asp Glu
 530 535 540
 Ala Tyr Thr Leu Leu Thr Lys Val Asp Leu Thr Leu Ser Ser Ser Arg
 545 550 555 560
 Val Lys Leu Ile Leu Ala Ala Val Leu Leu Gly Lys Gly Arg Leu Leu
 565 570 575
 Gln Asp Thr Asp Pro Ala Glu Glu Ala Arg Glu Ile Leu Glu Pro Leu
 580 585 590
 Val Glu Val Tyr Leu Glu Asp Glu Asn Phe Leu Leu Leu Leu Gly Lys
 595 600 605
 Val Tyr Leu Phe Leu Phe Trp Lys Asn Lys Asn Val Cys Leu Gly Lys
 610 615 620
 Leu Ala Arg Thr Tyr Leu Glu Lys Ala Thr Ser Leu Gly Cys Pro Glu
 625 630 635 640
 Ala Tyr Tyr Thr Leu Gly Lys Phe Tyr Ala Val Ile Lys Asp Val Asn
 645 650 655
 Lys Ala Trp Gly Met Val Ile Arg Ser Ala Gln Tyr Gly Val Arg Ile
 660 665 670
 Thr Glu Ala Lys Trp Leu Asn Asp Pro Tyr Leu Ala Asn Leu Arg Glu
 675 680 685
 Ile His Ala Phe Arg Glu Val Val Glu Asn Gln Lys Gly Arg Leu Trp
 690 695 700
 Leu Gly Asn Lys Thr Glu Met Lys Arg Asn
 705 710
 <210>301
 <211>405
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>301
 Ile Ser Ile Thr Ile Arg Glu Phe Leu Phe Phe Gly Phe Glu Cys Arg
 1 5 10 15
 Ala Lys Phe Tyr Asn Val Ile Met Ser Cys Phe Asn Leu Thr Ser Thr
 20 25 30
 Asn Glu Ser Leu Arg Pro Ile Ser Pro Lys Ala Ser Phe Pro Lys Gln
 35 40 45
 Gly Trp Gln Ser Tyr Phe Arg Ser Ala Leu Arg Lys His Arg Ser Asp
 50 55 60
 Thr Leu Ser Val Ser Val Cys Lys Val Asn Lys Tyr Asp Ala Asn Leu
 65 70 75 80
 Phe Val Arg Leu Thr Val Ile Ala Leu Ala Val Val Gly Val Leu Ile
 85 90 95
 Leu Phe Ser Ile Met Leu Ala Ser Ile Gln Gly Thr Leu Val Ile Thr
 100 105 110
 Ser Trp Pro Leu Val Thr Ala Ala Ile Leu Ile Pro Thr Ile Leu Leu
 115 120 125
 Thr Gly Gly Met Tyr Ile Leu His Arg Leu Gly Lys Lys Val Asp Val

130 135 140
 Ile Ser Gly Val Cys Ile Pro Pro Phe Ser Arg Arg Cys Trp Val Pro
 145 150 155 160
 Ile Ser Ser Ser His Thr Leu Glu Lys Phe Asp Glu Lys His Val Ser
 165 170 175
 Ala Cys Ser Tyr Leu Asp Ile Ser Thr Leu Ser Ala Asp Gly Ser Gly
 180 185 190
 Ile Ala Ala Val Tyr Gln Cys Pro Pro Leu Leu Phe Arg Ala Phe Pro
 195 200 205
 Cys Phe Gly Ile Pro Cys Ala Met Pro Phe Val Ala Leu Leu Arg Met
 210 215 220
 Ile Tyr Asn Leu Ile Arg Phe Leu Val Val Pro Phe Tyr Ile Ile Phe
 225 230 235 240
 Arg Met Ile Tyr Glu His Phe Phe Cys Lys His Leu Pro Glu Asp Asp
 245 250 255
 Arg Phe Ile Tyr Lys Asp Val Ala Arg Glu Met Gly Arg Ser Leu Ala
 260 265 270
 Ala Phe Leu Lys Ala Pro Phe Tyr Ala Ser Ala Cys Met Ile Gly Ala
 275 280 285
 Phe Tyr Ser Leu Leu Asp Pro Leu Ala Gly Arg Val Leu Met Gly Ser
 290 295 300
 Val Glu Arg Asp Trp Asn Asp Asn Val Ile Leu Ala Arg Ser Val Ser
 305 310 315 320
 Leu Ala Asn Glu Ala His Ser Leu Phe Arg Phe Glu Gly Gly Gly Gly
 325 330 335
 Arg Lys Gly Leu Gly Gln His Ala Phe Tyr Leu Met Leu Cys Cys Gln
 340 345 350
 Pro Gln Ser Val Phe Leu Phe Asp Lys Gly Glu Ile Val Ser Gly Ala
 355 360 365
 His Pro Ser Ile Gln Leu Pro Glu Arg Arg Gly Leu Asp Thr Ser Gly
 370 375 380
 Arg Tyr Pro His Ile Ser Val Ile Pro Asp Ser Gly Asn Asp Ser Ala
 385 390 395 400
 Lys Asn Phe Ile Val
 405

<210>302

<211>400

<212>PRT

<213>Chlamydia pneumoniae

<400>302

Asn Phe Asn Arg Leu Met Lys Lys Gln Arg Ser His Tyr Thr Lys Asn
 1 5 10 15
 Asn Leu Leu Leu Leu Ser Ile Leu Val Gly Leu Gly Leu Gly Ser
 20 25 30
 Val Gln Ser Pro Trp Ile Val Tyr Ser Ala Glu Cys Ile Ala Asn Thr
 35 40 45
 Phe Leu Lys Phe Leu Arg Leu Leu Ser Ile Pro Leu Val Phe Cys Ala
 50 55 60
 Leu Gly Ser Thr Ile Thr Ser Ile Gln Asn Phe Asn Thr Met Val Thr
 65 70 75 80
 Leu Gly Lys Arg Ile Leu Tyr Tyr Thr Leu Leu Thr Thr Val Ile Ala
 85 90 95
 Ala Ser Ile Gly Leu Leu Leu Phe Phe Leu Leu Arg Pro Gln Met Ile
 100 105 110
 Thr Gln Asp Ala Leu Ala Thr Thr Thr Lys Cys Asn Pro Leu Gly Tyr
 115 120 125
 Leu Asp Val Leu Ser Asp Thr Leu Pro Glu Asn Ile Phe Lys Pro Phe
 130 135 140
 Leu Gln Gly Asn Val Ile Ser Ala Ala Cys Leu Ala Val Leu Leu Gly
 145 150 155 160
 Thr Ala Ser Leu Phe Leu Gln Glu Lys Glu Lys His Phe Val Asn Gln
 165 170 175
 Phe Phe Asn Ser Phe Phe Ser Ile Phe Leu Asn Leu Ala Arg Gly Gly
 180 185 190

Leu Lys Leu Leu Pro Ile Ala Met Leu Gly Phe Ser Val Ile Leu Phe
 195 200 205
 Lys Glu Leu Lys Asp Gln Ser Asn Leu Thr Met Phe Ala Glu Tyr Leu
 210 215 220
 Leu Cys Val Ile Gly Ala Asn Leu Ala Gln Gly Phe Ile Val Leu Pro
 225 230 235 240
 Ile Leu Leu Lys Ile Asn Lys Val Ser Pro Leu Lys Val Ala Lys Ala
 245 250 255
 Met Ser Pro Ala Leu Val Thr Ala Phe Phe Ser Lys Ser Ser Ala Ala
 260 265 270
 Thr Leu Pro Leu Thr Met Glu Leu Ala Glu Asp Asp Leu Lys Ile Asn
 275 280 285
 Lys Asn Leu Ser Arg Phe Ser Phe Pro Leu Cys Ser Val Ile Asn Met
 290 295 300
 Asn Gly Cys Ala Ala Phe Ile Leu Ile Thr Val Leu Phe Val Ala Thr
 305 310 315 320
 Ser Asn Gly Met Ile Ile Ser Pro Leu Met Ser Leu Gly Trp Ile Phe
 325 330 335
 Ile Ala Thr Leu Ala Ala Ile Gly Asn Ala Gly Val Pro Met Gly Cys
 340 345 350
 Tyr Phe Leu Thr Leu Ser Leu Leu Thr Ser Met Asn Val Pro Leu Ser
 355 360 365
 Ile Leu Gly Leu Ile Leu Pro Phe Tyr Thr Val Ile Asp Met Ile Glu
 370 375 380
 Thr Ser Leu Asn Val Trp Ser Asp Cys Cys Val Val Ser Leu Ala Asn
 385 390 395 400

<210>303

<211>234

<212>PRT

<213>Chlamydia pneumoniae

<400>303

Ser Trp Gly Ile Ile Ile Phe Ser Thr Cys Ala Ser Leu Asp Ile Leu
 1 5 10 15
 Gly Thr Thr Gln Leu Gln Asp Gly Ala Gly Ala Ser Ser Ile Gly Ile
 20 25 30
 Thr Phe Ile Tyr Leu Pro Glu Leu Phe Thr Arg Leu Pro Gly Gly Ile
 35 40 45
 Tyr Leu Thr Thr Leu Phe Ser Ser Ile Phe Phe Leu Ala Phe Ser Met
 50 55 60
 Ala Ala Leu Ser Ser Met Ile Ser Met Leu Phe Leu Leu Ser Gln Thr
 65 70 75 80
 Leu Ala Glu Phe Gly Ile Lys Pro Tyr Ile Ser Glu Thr Leu Ala Thr
 85 90 95
 Ile Ile Ala Phe Val Leu Gly Ile Pro Ser Ala Leu Ser Leu Thr Phe
 100 105 110
 Phe Ser Asn Gln Asp Thr Val Trp Gly Val Ala Leu Ile Val Asn Gly
 115 120 125
 Leu Ile Phe Ile Tyr Ala Ala Leu Val Tyr Gly Phe Pro Lys Leu Lys
 130 135 140
 Lys Glu Val Ile Asn Ala Ala Pro Gly Asp Leu Arg Leu Asn Lys Ala
 145 150 155 160
 Phe Asp Tyr Ile Ile Lys Tyr Leu Leu Leu Ile Glu Gly Ile Leu Leu
 165 170 175
 Leu Gly Trp Tyr Phe Tyr Glu Gly Leu Phe Pro Glu Asn Gly Gln Trp
 180 185 190
 Trp Asn Pro Ile Ser Leu Tyr Ser Leu Gly Ser Leu Val Leu Gln Trp
 195 200 205
 Ser Leu Gly Leu Ile Ile Leu Trp Lys Phe Asn Lys Gln Leu Tyr Leu
 210 215 220
 Arg Phe Ser Arg Tyr Asn His Glu Ile Leu
 225 230

<210>304

<211>179

<212>PRT

<213>Chlamydia pneumoniae

<400>304

Glu Lys His Met Ser Ala Pro Ile Pro Thr Pro Gln Glu Leu Ser Asp
 1 5 10 15
 Gln Ile Thr Cys Leu Asn Val Gln Tyr Gln Gln Val Ser Glu Leu Ala
 20 25 30
 Arg Glu Asn Lys Gly Asp Ile Glu Gly Leu Lys Thr Leu Thr Ala Ala
 35 40 45
 Leu Thr Ala Asp Ala Gly Ile Gln Pro Ser Ala Asp Glu Ile Tyr Ser
 50 55 60
 Leu Gln Thr Ala Ala Ala Leu Ile Leu Ser Ala Ser Glu Lys Pro Gly
 65 70 75 80
 Ser Gly Pro Ser Gly Ser Thr Glu Gly Ser Val Thr Val Gln Ser Pro
 85 90 95
 Cys Lys Phe Lys Lys Val Leu Ala Val Val Leu Thr Ile Ile Ala Leu
 100 105 110
 Ile Ala Ile Ala Val Leu Ile Ala Cys Ile Ile Ala Ala Cys Gly Gly
 115 120 125
 Phe Pro Leu Leu Leu Ser Ala Leu Asn Leu Tyr Thr Ile Gly Ala Cys
 130 135 140
 Val Ser Leu Pro Ile Ile Ala Ser Thr Ser Val Ala Leu Ile Cys Leu
 145 150 155 160
 Cys Thr Phe Val Ala Asn Ser Leu Ile Lys Pro Val Ile Thr Val Arg
 165 170 175
 Thr Thr Arg

<210>305

<211>212

<212>PRT

<213>Chlamydia pneumoniae

<400>305

Val Lys Asn Thr Lys Asn Ser Asp Phe Met Thr Ser Pro Ile Pro Phe
 1 5 10 15
 Gln Ser Ser Gly Asp Ala Ser Phe Leu Ala Glu Gln Pro Gln Gln Leu
 20 25 30
 Pro Ser Thr Ser Glu Ser Gln Leu Val Thr Gln Leu Leu Thr Met Met
 35 40 45
 Lys His Thr Gln Ala Leu Ser Glu Thr Val Leu Gln Gln Arg Asp
 50 55 60
 Arg Leu Xaa Thr Ala Ser Ile Ile Leu Gln Val Gly Gly Ala Pro Thr
 65 70 75 80
 Gly Gly Ala Gly Ala Pro Phe Gln Pro Gly Pro Ala Asp Asp His His
 85 90 95
 His Pro Ile Pro Pro Pro Val Val Pro Ala Gln Ile Glu Thr Glu Ile
 100 105 110
 Thr Thr Ile Arg Ser Glu Leu Gln Leu Met Arg Ser Thr Leu Gln Gln
 115 120 125
 Ser Thr Lys Gly Ala Arg Thr Gly Val Leu Val Val Thr Ala Ile Leu
 130 135 140
 Met Thr Ile Ser Leu Leu Ala Ile Ile Ile Ile Ile Leu Ala Val Leu
 145 150 155 160
 Gly Phe Thr Gly Val Leu Pro Gln Val Ala Leu Leu Met Gln Gly Glu
 165 170 175
 Thr Asn Leu Ile Trp Ala Met Val Ser Gly Ser Ile Ile Cys Phe Ile
 180 185 190
 Ala Leu Ile Gly Thr Leu Gly Leu Ile Leu Thr Asn Lys Asn Thr Pro
 195 200 205
 Leu Pro Ala Ser
 210

<210>306

<211>907

<212>PRT

<213>Chlamydia pneumoniae

<400>306

Val Trp Ser Met Gln Arg Val Leu Arg Leu Leu Phe Asn Leu His His
 1 5 10 15
 Gly Glu Glu Lys Arg Ala Phe Leu Phe Phe Leu Leu Gly Leu Val Trp
 20 25 30
 Gly Ile Gly Cys Tyr Gly Thr Leu Ser Leu Ala Glu Gly Leu Phe Ile
 35 40 45
 Glu Lys Leu Gly Ser Ala Glu Leu Pro Lys Ile Tyr Leu Gly Ser Ser
 50 55 60
 Leu Ile Leu Cys Val Leu Ser Ser Leu Ile Leu Tyr Asn Leu Phe Lys
 65 70 75 80
 Lys His Ile Ser Ala Thr Ala Leu Phe Leu Ile Pro Val Ser Leu Ser
 85 90 95
 Ile Leu Cys Asn Phe Tyr Leu Ile Leu Ser Ser Ile Phe Ala Ile Asp
 100 105 110
 Pro Pro Arg Ser Pro Leu Phe Phe Tyr Arg Ile Val Ile Trp Ser Leu
 115 120 125
 Thr Ile Leu Ser Tyr Thr Ser Phe Trp Gly Phe Val Asp Gln Phe Phe
 130 135 140
 Asn Leu Gln Asp Gly Lys Arg His Phe Cys Ile Phe Asn Ala Ile Ile
 145 150 155 160
 Phe Leu Gly Asp Ala Ile Gly Ser Gly Ile Ile Ala Ser Leu Val His
 165 170 175
 Thr Ile Gly Ile Gln Gly Ile Leu Ile Leu Phe Thr Ala Ala Leu Val
 180 185 190
 Leu Thr Phe Pro Ile Val Phe Tyr Val Ser Lys Ser Leu Lys Ser Leu
 195 200 205
 Ser Asp Asp His Asp Leu Phe Ile Asp Thr Gly His Pro Pro Pro Leu
 210 215 220
 Ser Lys Ala Leu Lys Leu Cys Phe Tyr Asp Lys Tyr Thr Phe Tyr Leu
 225 230 235 240
 Leu Cys Phe Tyr Phe Leu Met Gln Leu Leu Ala Ile Ala Thr Glu Phe
 245 250 255
 Asn Tyr Leu Lys Ile Phe Glu Ile Gln Phe Ala Ser Lys Glu Glu Phe
 260 265 270
 Glu Leu Val Ala His Ile Gly Lys Cys Ser Leu Trp Ile Ser Leu Gly
 275 280 285
 Asn Met Cys Phe Ala Leu Phe Ala Tyr Ser Arg Ile Val Lys Arg Leu
 290 295 300
 Gly Val Asn Asn Ile Ile Leu Phe Ala Pro Leu Cys Phe Leu Ser Leu
 305 310 315 320
 Phe Leu Phe Trp Thr Phe Lys Thr Thr Leu Ser Ile Ala Val Leu Ala
 325 330 335
 Met Val Val Arg Glu Gly Val Thr Tyr Ala Leu Asp Asp Asn Asn Leu
 340 345 350
 Gln Leu Leu Ile Tyr Gly Val Pro Asn Lys Ile Arg Asn Gln Ile Arg
 355 360 365
 Ile Val Val Glu Ser Phe Ile Glu Pro Ile Gly Met Leu Val Trp Ser
 370 375 380
 Leu Val Cys Phe Leu Ser Ser Gln Gln Tyr Val Phe Cys Leu Ile Ile
 385 390 395 400
 Ser Leu Ile Ala Thr Ile Leu Val Cys Leu Val Arg Ser Tyr Tyr Ala
 405 410 415
 Lys Ala Ile Leu Lys Asn Leu Ser Ala Gln Ala Leu Gln Leu Thr Arg
 420 425 430
 Ser Met Gln Asp Trp Ile Lys Ser Met Thr Val Lys Gln Lys Arg Gln
 435 440 445
 Val Glu Leu Phe Leu Leu Ala His Leu Lys His Pro Ser Glu Arg His
 450 455 460
 Gln Thr Phe Ala Phe Gln His Leu Leu Asn Leu Ala Ser Arg Ser Val
 465 470 475 480
 Leu Pro Ser Leu Leu Ala His Met Asn Lys Leu Ser Leu Pro Asn Lys
 485 490 495
 Leu Lys Thr Ile Glu Met Val Lys Ser Ser Leu Trp Ala Lys Asp Phe
 500 505 510

Leu Thr Leu Glu Leu Leu Lys Arg Trp Thr Ser Ile Phe Pro His Pro
 515 520 525
 Ala Ile Ala Ser Ala Ile His Leu Tyr Phe Ala Glu His Asp Leu Leu
 530 535 540
 His Ile Thr His Ile Ala Glu Asp Leu Tyr Asp Thr Val Gly Asp Arg
 545 550 555 560
 Leu Leu Ala Ala Ile Leu Thr Val Arg Arg Gln Glu Ala Tyr Gly Pro
 565 570 575
 Tyr Arg Asp Leu Ala Asp Lys Arg Leu Lys Glu Leu Leu Asn Ser Asp
 580 585 590
 Gln Pro Glu Asp Ile Val Met Gly Leu Thr Ile Leu Lys Leu Glu Lys
 595 600 605
 Asn Pro Gln Asn Phe Pro Ile Leu Leu Asp Phe Leu Asn Thr Lys Asn
 610 615 620
 Glu Asp Ile Leu Ile Val Thr Cys Lys Ala Leu His Thr Ser Val Arg
 625 630 635 640
 Ala Asn His Lys Pro Tyr Cys Pro Glu Leu Lys Arg Leu Arg Gln
 645 650 655
 Cys Ser His Asn Asp Glu Ala Ser Gln Tyr Leu Leu Lys Thr Ile Ser
 660 665 670
 Ile Ala Leu Asp Ile Ser Phe Val Lys Asp Leu Leu Met Thr Thr Ser
 675 680 685
 Gln Leu Lys Asn Thr Ser Arg Lys Tyr Ala Glu Ala Met Ile Gly Glu
 690 695 700
 Leu Asp Lys Glu Val Ala Pro Ala Phe Leu Gln Val Leu Thr Asp Glu
 705 710 715 720
 Gly Thr His Asn Arg Cys Arg Ile Leu Ala Lys Ala Leu Cys Lys
 725 730 735
 Ile Asp Asn Trp Leu Leu Lys Lys His Ala Tyr Lys Ile Val Lys Ser
 740 745 750
 Lys Ala Ser Lys Ala Leu Phe Tyr Ser Tyr His Gly His Tyr Ile Gln
 755 760 765
 Lys Lys Tyr Pro Thr Tyr Asn Leu Ser Leu Leu Ala Asn Thr Leu Asn
 770 775 780
 Ser Asn Tyr Tyr Ala Glu Val Asn Phe Met Leu Ser Leu Leu Gly Ile
 785 790 795 800
 Leu Gly Ser Met Glu His Ser Gly Val Leu Ile Arg Ala Leu Thr Ser
 805 810 815
 Lys Asn Gln Lys Ile Lys Ala Gln Ala Leu Glu Ser Leu Glu Lys Asn
 820 825 830
 Cys Asp Ser His Leu Phe Ser Leu Glu Pro Phe Val Asn Gln Pro
 835 840 845
 Gly Met Cys Tyr Ser Glu Lys Tyr Tyr Phe Lys Cys Gly Val Ile Pro
 850 855 860
 Leu Thr Leu Lys Glu Leu Leu Asn Met Met Glu Asn Ser Pro Ser Ser
 865 870 875 880
 Leu Asn Lys Leu Thr Ala Gln Gln Leu Lys Glu Glu Leu Ser Tyr Cys
 885 890 895
 Asp Pro Asp Phe Pro Ile Cys Lys Tyr Asn Leu
 900 905

<210>307

<211>142

<212>PRT

<213>Chlamydia pneumoniae

<400>307

Ile Arg Asn Phe Phe Met Asn Leu Ile Asp Arg Ala Phe Leu Leu Lys
 1 5 10 15
 Lys Thr Ile Ile Phe Gln Ser Leu Asp Met Asp Leu Leu Leu Thr Ile
 20 25 30
 Ala Asp Lys Thr Glu Thr Ile Ile Phe Lys Pro Gly Ser Asn Val Phe
 35 40 45
 Ser Ile Gly Gln Pro Gly Phe Ser Phe Tyr Ile Ile Val Glu Gly Tyr
 50 55 60
 Ile Thr Ile Ser Lys Glu Lys Leu Glu Ser Pro Leu Asn Leu Lys Pro

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. 65              70              75              80
Leu Asp Cys Phe Gly Glu Glu Ser Leu Phe Asn Asn Lys Pro Arg Glu
      85              90              95
Tyr Asn Ala Ser Ala Asn Thr Gln Val Arg Met Leu Val Leu Ser Lys
      100             105             110
Gly Gln Ile Leu Asn Ile Val Glu Glu Cys Pro Ser Val Ala Leu Ser
      115             120             125
Phe Leu Glu Leu Tyr Ala Lys Gln Ile Lys Phe Arg Glu Pro
      130             135             140
<210>308
<211>79
<212>PRT
<213>Chlamydia pneumoniae
<400>308
Met Ser Leu Glu Asp Asp Val Ile Ala Ile Ile Val Glu Gln Leu Gly
  1      5      10      15
Val Asp Pro Lys Glu Val Asn Glu Asn Ser Ser Phe Ile Glu Asp Leu
      20      25      30
Asn Ala Asp Ser Leu Asp Leu Thr Glu Leu Ile Met Thr Leu Glu Glu
      35      40      45
Lys Phe Ala Phe Glu Ile Ser Glu Glu Asp Ala Glu Lys Leu Arg Thr
      50      55      60
Val Gly Asp Val Phe Thr Tyr Ile Lys Lys Arg Gln Ala Glu Gln
      65      70      75
<210>309
<211>251
<212>PRT
<213>Chlamydia pneumoniae
<400>309
Met Ile Cys Met Asp Ile Thr Leu Val Gly Lys Lys Val Ile Val Thr
  1      5      10      15
Gly Gly Ser Arg Gly Ile Gly Leu Gly Ile Val Lys Leu Phe Leu Glu
      20      25      30
Asn Gly Ala Asp Val Glu Ile Trp Gly Leu Asn Glu Glu Arg Gly Gln
      35      40      45
Ala Val Ile Glu Ser Leu Thr Gly Leu Gly Gly Glu Val Ser Phe Ala
      50      55      60
Arg Val Asp Val Ser His Asn Gly Gly Val Lys Asp Cys Val Gln Lys
      65      70      75      80
Phe Leu Asp Lys His Asn Lys Ile Asp Ile Leu Val Asn Asn Ala Gly
      85      90      95
Ile Thr Arg Asp Asn Leu Leu Met Arg Met Ser Glu Asp Asp Trp Gln
      100     105     110
Ser Val Ile Ser Thr Asn Leu Thr Ser Leu Tyr Tyr Thr Cys Ser Ser
      115     120     125
Val Ile Arg His Met Ile Lys Ala Arg Ser Gly Ser Ile Ile Asn Val
      130     135     140
Ala Ser Ile Val Ala Lys Ile Gly Ser Ala Gly Gln Thr Asn Tyr Ala
      145     150     155     160
Ala Ala Lys Ala Gly Ile Ile Ala Phe Thr Lys Ser Leu Ala Lys Glu
      165     170     175
Val Ala Ala Arg Asn Ile Arg Val Asn Cys Leu Ala Pro Gly Phe Ile
      180     185     190
Glu Thr Asp Met Thr Ser Val Leu Asn Asp Asn Leu Lys Ala Glu Trp
      195     200     205
Leu Lys Ser Ile Pro Leu Gly Arg Ala Gly Thr Pro Glu Asp Val Ala
      210     215     220
Arg Val Ala Leu Phe Leu Ala Ser Gln Leu Ser Ser Tyr Met Thr Ala
      225     230     235     240
Gln Thr Leu Val Val Asp Gly Gly Leu Thr Tyr
      245     250
<210>310
<211>308
<212>PRT

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<213>Chlamydia pneumoniae

<400>310

Met Lys Lys Arg Tyr Ala Phe Leu Phe Pro Gly Gln Gly Ser Gln Tyr
 1 5 10 15
 Val Gly Met Gly Gln Asp Leu Tyr Met Glu Tyr Pro Glu Val Arg Glu
 20 25 30
 Leu Phe Asp Phe Ala Asn Glu Arg Leu Gly Phe Ser Leu Thr Ser Ile
 35 40 45
 Met Phe Glu Gly Pro Glu Asp Leu Leu Met Glu Thr Val His Ser Gln
 50 55 60
 Leu Ala Ile Tyr Leu His Ser Met Ala Val Val Lys Val Leu Ser Gln
 65 70 75 80
 Arg Ser Ser Ile Gln Pro Ser Leu Val Ser Gly Leu Ser Leu Gly Glu
 85 90 95
 Tyr Thr Ala Leu Val Ala Ser Asp Arg Ile Ser Val Leu Asp Gly Leu
 100 105 110
 Glu Leu Val Arg Lys Arg Gly Gln Leu Met Asn Glu Ala Cys Asn Gln
 115 120 125
 Ser Pro Gly Ala Met Ala Ala Leu Leu Gly Leu Pro Ser Glu Val Ile
 130 135 140
 Glu Glu Asn Ile Thr Ser Leu Gly Gln Gly Ile Trp Ile Ala Asn Tyr
 145 150 155 160
 Asn Ala Pro Lys Gln Leu Val Val Ala Gly Ile Ala Glu Lys Val Asp
 165 170 175
 Gln Ala Ile Glu Leu Phe Arg Asp Leu Gly Cys Lys Lys Ala Val Arg
 180 185 190
 Leu Lys Val Ser Gly Ala Phe His Thr Pro Leu Met Gln Val Ala Gln
 195 200 205
 Asp Gly Leu Ala Pro Asp Ile Tyr Ala Leu Cys Met Lys Asp Ser Ser
 210 215 220
 Leu Pro Leu Val Ser His Val Val Gly Lys Ser Leu Val Asn Thr Glu
 225 230 235 240
 Glu Met Arg Glu Cys Leu Ala Arg Gln Met Thr Ser Pro Thr Leu Trp
 245 250 255
 Tyr Gln Ser Cys Tyr His Ile Glu Ser Glu Val Asp Glu Phe Leu Glu
 260 265 270
 Leu Gly Pro Gly Lys Val Leu Ala Gly Leu Asn Arg Ser Ile Gly Ile
 275 280 285
 Ser Lys Pro Ile Thr Ser Leu Gly Thr Phe Ala Gln Ile Glu Lys Phe
 290 295 300
 Leu Ser Glu Val
 305

<210>311

<211>116

<212>PRT

<213>Chlamydia pneumoniae

<400>311

Leu Tyr His Phe Leu Asp Ser Ser Thr Arg Leu Tyr Phe Pro Ile Lys
 1 5 10 15
 Arg Ser Leu Ala Gln Ala His Leu Gly Ile Glu Asp Val Pro Thr Phe
 20 25 30
 Asp Cys Gln Ala Ala Cys Thr Gly Tyr Leu Tyr Gly Leu Ser Val Ala
 35 40 45
 Lys Ala Tyr Val Glu Ser Gly Thr Tyr Asn His Val Leu Leu Ile Ala
 50 55 60
 Ala Asp Lys Leu Ser Ser Phe Val Asp Tyr Thr Asp Arg Asn Thr Cys
 65 70 75 80
 Val Leu Phe Gly Asp Gly Gly Ala Ala Cys Val Ile Gly Glu Ser Arg
 85 90 95
 Pro Gly Ser Leu Glu Ile Asn Arg Leu Ser Leu Gly Ala Asp Gly Lys
 100 105 110
 Leu Gly Glu Tyr
 115

<210>312

<211>105
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>312
 Met Trp Phe Ser Val Asn Lys Asn Lys Lys Ala Ala Ile Trp Ala Thr
 1 5 10 15
 Gly Ser Tyr Leu Pro Glu Lys Val Leu Ser Asn Ala Asp Leu Glu Lys
 20 25 30
 Met Val Asp Thr Ser Asp Glu Trp Ile Val Thr Arg Thr Gly Ile Lys
 35 40 45
 Glu Arg Arg Ile Ala Gly Pro Gln Glu Tyr Thr Ser Leu Met Gly Ala
 50 55 60
 Ile Ala Ala Glu Lys Ala Ile Ala Asn Ala Gly Leu Ser Lys Asp Gln
 65 70 75 80
 Ile Asp Cys Ile Ile Phe Ser Thr Ala Ala Pro Asp Tyr Ile Phe Pro
 85 90 95
 Ser Ser Gly Val Leu Leu Lys His Ile
 100 105

<210>313
 <211>230
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>313
 Arg Lys Lys Leu Val Tyr Tyr Ser Glu Ser Leu Tyr Ser Asn Leu Asn
 1 5 10 15
 Leu Gly Pro Arg Pro Glu Cys Lys Asn Lys Ile His Ile Thr Met Thr
 20 25 30
 Arg Tyr Pro Asp Tyr Leu Ser Lys Leu Ile Phe Phe Leu Arg Lys Leu
 35 40 45
 Pro Gly Ile Gly Phe Lys Thr Ala Glu Lys Leu Ala Phe Glu Leu Ile
 50 55 60
 Ser Trp Asp Ser Glu Gln Leu Lys Ile Leu Gly Asn Ala Phe His Asn
 65 70 75 80
 Val Ala Ser Glu Arg Ser His Cys Pro Leu Cys Phe Thr Leu Lys Glu
 85 90 95
 Ser Lys Glu Ala Asp Cys His Phe Cys Arg Glu Glu Arg Asp Asn Gln
 100 105 110
 Ser Leu Cys Ile Val Ala Ser Pro Lys Asp Val Phe Phe Leu Glu Arg
 115 120 125
 Ser Lys Val Phe Lys Gly Arg Tyr His Val Leu Gly Ser Leu Leu Ser
 130 135 140
 Pro Ile Thr Gly Lys His Ile Glu Asn Glu Arg Leu Ser Ile Leu Lys
 145 150 155 160
 Ser Arg Ile Glu Thr Leu Cys Pro Lys Glu Ile Ile Leu Ala Ile Asp
 165 170 175
 Ala Thr Leu Glu Gly Asp Ala Thr Ala Leu Phe Leu Lys Gln Glu Leu
 180 185 190
 Gln His Phe Ser Val Asn Ile Ser Arg Leu Ala Leu Gly Leu Pro Ile
 195 200 205
 Gly Leu Ser Phe Asp Tyr Val Asp Ser Gly Thr Leu Ala Arg Ala Phe
 210 215 220
 Ser Gly Arg His Ser Tyr
 225 230

<210>314
 <211>795
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>314
 Gly Arg Leu Leu Gly Met Leu Ile Met Arg Asn Lys Val Ile Leu Gln
 1 5 10 15
 Ile Ser Ile Leu Ala Leu Ile Gln Thr Pro Leu Thr Leu Phe Ser Thr
 20 25 30
 Glu Lys Val Lys Glu Gly His Val Val Val Asp Ser Ile Thr Ile Ile
 35 40 45

Thr Glu Gly Glu Asn Ala Ser Asn Lys His Pro Leu Pro Lys Leu Lys
 50 55 60
 Thr Arg Ser Gly Ala Leu Phe Ser Gln Leu Asp Phe Asp Glu Asp Leu
 65 70 75 80
 Arg Ile Leu Ala Lys Glu Tyr Asp Ser Val Glu Pro Lys Val Glu Phe
 85 90 95
 Ser Glu Gly Lys Thr Asn Ile Ala Leu His Leu Ile Ala Lys Pro Ser
 100 105 110
 Ile Arg Asn Ile His Ile Ser Gly Asn Gln Val Val Pro Glu His Lys
 115 120 125
 Ile Leu Lys Thr Leu Gln Ile Tyr Arg Asn Asp Leu Phe Glu Arg Glu
 130 135 140
 Lys Phe Leu Lys Gly Leu Asp Asp Leu Arg Thr Tyr Tyr Leu Lys Arg
 145 150 155 160
 Gly Tyr Phe Ala Ser Ser Val Asp Tyr Ser Leu Glu His Asn Gln Glu
 165 170 175
 Lys Gly His Ile Asp Val Leu Ile Lys Ile Asn Glu Gly Pro Cys Gly
 180 185 190
 Lys Ile Lys Gln Leu Thr Phe Ser Gly Ile Ser Arg Ser Glu Lys Ser
 195 200 205
 Asp Ile Gln Glu Phe Ile Gln Thr Lys Gln His Ser Thr Thr Thr Ser
 210 215 220
 Trp Phe Thr Gly Ala Gly Leu Tyr His Pro Asp Ile Val Glu Gln Asp
 225 230 235 240
 Ser Leu Ala Ile Thr Asn Tyr Leu His Asn Asn Gly Tyr Ala Asp Ala
 245 250 255
 Ile Val Asn Ser His Tyr Asp Leu Asp Asp Lys Gly Asn Ile Leu Leu
 260 265 270
 Tyr Met Asp Ile Asp Arg Gly Ser Arg Tyr Thr Leu Gly His Val His
 275 280 285
 Ile Gln Gly Phe Glu Val Leu Pro Lys Arg Leu Ile Glu Lys Gln Ser
 290 295 300
 Gln Val Gly Pro Asn Asp Leu Tyr Cys Pro Asp Lys Ile Trp Asp Gly
 305 310 315 320
 Ala His Lys Ile Lys Gln Thr Tyr Ala Lys Tyr Gly Tyr Ile Asn Thr
 325 330 335
 Asn Val Asp Val Leu Phe Ile Pro His Ala Thr Arg Pro Ile Tyr Asp
 340 345 350
 Val Thr Tyr Glu Val Ser Glu Gly Ser Pro Tyr Lys Val Gly Leu Ile
 355 360 365
 Lys Ile Thr Gly Asn Thr His Thr Lys Ser Asp Val Ile Leu His Glu
 370 375 380
 Thr Ser Leu Phe Pro Gly Asp Thr Phe Asn Arg Leu Lys Leu Glu Asp
 385 390 395 400
 Thr Glu Gln Arg Leu Arg Asn Thr Gly Tyr Phe Gln Ser Val Ser Val
 405 410 415
 Tyr Thr Val Arg Ser Gln Leu Asp Pro Met Gly Asn Ala Asp Gln Tyr
 420 425 430
 Arg Asp Ile Phe Val Glu Val Lys Glu Thr Thr Thr Gly Asn Leu Gly
 435 440 445
 Leu Phe Leu Gly Phe Ser Ser Leu Asp Asn Leu Phe Gly Gly Ile Glu
 450 455 460
 Leu Ser Glu Ser Asn Phe Asp Leu Phe Gly Ala Arg Asn Ile Phe Ser
 465 470 475 480
 Lys Gly Phe Arg Cys Leu Arg Gly Gly Gly Glu His Leu Phe Leu Lys
 485 490 495
 Ala Asn Phe Gly Asp Lys Val Thr Asp Tyr Thr Leu Lys Trp Thr Lys
 500 505 510
 Pro His Phe Leu Asn Thr Pro Trp Ile Leu Gly Ile Glu Leu Asp Lys
 515 520 525
 Ser Ile Asn Arg Ala Leu Ser Lys Asp Tyr Ala Val Gln Thr Tyr Gly
 530 535 540
 Gly Asn Val Ser Thr Thr Tyr Ile Leu Asn Glu His Leu Lys Tyr Gly
 545 550 555 560

Leu Phe Tyr Arg Gly Ser Gln Thr Ser Leu His Glu Lys Arg Lys Phe
 565 570 575
 Leu Leu Gly Pro Asn Ile Asp Ser Asn Lys Gly Phe Val Ser Ala Ala
 580 585 590
 Gly Val Asn Leu Asn Tyr Asp Ser Val Asp Ser Pro Arg Thr Pro Thr
 595 600 605
 Thr Gly Ile Arg Gly Gly Val Thr Phe Glu Val Ser Gly Leu Gly Gly
 610 615 620
 Thr Tyr His Phe Thr Lys Leu Ser Leu Asn Ser Ser Ile Tyr Arg Lys
 625 630 635 640
 Leu Thr Arg Lys Gly Ile Leu Lys Ile Lys Gly Glu Ala Gln Phe Ile
 645 650 655
 Lys Pro Tyr Ser Asn Thr Thr Ala Glu Gly Val Pro Val Ser Glu Arg
 660 665 670
 Phe Phe Leu Gly Gly Glu Thr Thr Val Arg Gly Tyr Lys Ser Phe Ile
 675 680 685
 Ile Gly Pro Lys Tyr Ser Ala Thr Glu Pro Gln Gly Leu Ser Ser
 690 695 700
 Leu Leu Ile Ser Glu Glu Phe Gln Tyr Pro Leu Ile Arg Gln Pro Asn
 705 710 715 720
 Ile Ser Ala Phe Val Phe Leu Asp Ser Gly Phe Val Gly Leu Gln Glu
 725 730 735
 Tyr Lys Ile Ser Leu Lys Asp Leu Arg Ser Ser Ala Gly Phe Gly Leu
 740 745 750
 Arg Phe Asp Val Met Asn Asn Val Pro Val Met Leu Gly Phe Gly Trp
 755 760 765
 Pro Phe Arg Pro Thr Glu Thr Leu Asn Gly Glu Lys Ile Asp Val Ser
 770 775 780
 Gln Arg Phe Phe Phe Ala Leu Gly Gly Met Phe
 785 790 795

<210>315

<211>158

<212>PRT

<213>Chlamydia pneumoniae

<400>315

Asp Gln Gln Ala Gln Leu Asn Ala Asn Leu Gly Tyr Val Asn Leu Lys
 1 5 10 15
 Arg Cys Leu Glu Glu Ser Asp Leu Gly Lys Lys Glu Thr Glu Glu Leu
 20 25 30
 Glu Ala Xaa Lys Gln Gln Phe Val Lys Asn Ala Glu Lys Ile Glu Glu
 35 40 45
 Glu Leu Thr Ser Ile Tyr Asn Lys Leu Gln Asp Glu Asp Tyr Met Glu
 50 55 60
 Ser Leu Ser Asp Ser Ala Ser Glu Glu Leu Arg Lys Lys Phe Glu Asp
 65 70 75 80
 Leu Ser Gly Glu Tyr Asn Ala Tyr Gln Ser Gln Tyr Tyr Gln Ser Ile
 85 90 95
 Asn Gln Ser Asn Val Lys Arg Ile Gln Lys Leu Ile Gln Glu Val Lys
 100 105 110
 Ile Ala Ala Glu Ser Val Arg Ser Lys Glu Lys Leu Glu Ala Ile Leu
 115 120 125
 Asn Glu Glu Ala Val Leu Ala Ile Ala Pro Gly Thr Asp Lys Thr Thr
 130 135 140
 Glu Ile Ile Ala Ile Leu Asn Glu Ser Phe Lys Lys Gln Asn
 145 150 155

<210>316

<211>367

<212>PRT

<213>Chlamydia pneumoniae

<400>316

Ser Lys Phe Lys Glu Phe Ser Met Ser Glu Ala Pro Val Tyr Thr Leu
 1 5 10 15
 Lys Gln Leu Ala Glu Leu Leu Gln Val Glu Val Gln Gly Asn Ile Glu
 20 25 30

Thr Pro Ile Ser Gly Val Glu Asp Ile Ser Gln Ala Gln Pro His His
 35 40 45
 Ile Ala Phe Leu Asp Asn Glu Lys Tyr Ser Ser Phe Leu Lys Asn Thr
 50 55 60
 Lys Ala Gly Ala Ile Ile Leu Ser Arg Ser Gln Ala Met Gln His Ala
 65 70 75 80
 His Leu Lys Lys Asn Phe Leu Ile Thr Asn Glu Ser Pro Ser Leu Thr
 85 90 95
 Phe Gln Lys Cys Ile Glu Leu Phe Ile Glu Pro Val Thr Ser Gly Phe
 100 105 110
 Pro Gly Ile His Pro Thr Ala Val Ile His Pro Thr Ala Arg Ile Glu
 115 120 125
 Lys Asn Val Thr Ile Glu Pro Tyr Val Val Ile Ser Gln His Ala His
 130 135 140
 Ile Gly Ser Asp Thr Tyr Ile Gly Ala Gly Ser Val Ile Gly Ala His
 145 150 155 160
 Ser Val Leu Gly Ala Asn Cys Leu Ile His Pro Lys Val Val Ile Arg
 165 170 175
 Glu Arg Val Leu Met Gly Asn Arg Val Val Val Gln Pro Gly Ala Val
 180 185 190
 Leu Gly Ser Cys Gly Phe Gly Tyr Ile Thr Asn Ala Phe Gly His His
 195 200 205
 Lys Pro Leu Lys His Leu Gly Tyr Val Ile Val Gly Asp Asp Val Glu
 210 215 220
 Ile Gly Ala Asn Thr Thr Ile Asp Arg Gly Arg Phe Lys Asn Thr Val
 225 230 235 240
 Ile His Glu Gly Thr Lys Ile Asp Asn Gln Val Gln Val Ala His His
 245 250 255
 Val Glu Ile Gly Lys His Ser Ile Ile Val Ala Gln Ala Gly Ile Ala
 260 265 270
 Gly Ser Thr Lys Ile Gly Glu His Val Ile Ile Gly Gly Gln Thr Gly
 275 280 285
 Ile Thr Gly His Ile Ser Ile Ala Asp His Val Ile Met Ile Ala Gln
 290 295 300
 Thr Gly Val Thr Lys Ser Ile Thr Ser Pro Gly Ile Tyr Gly Gly Ala
 305 310 315 320
 Pro Ala Arg Pro Tyr Gln Glu Thr His Arg Leu Ile Ala Lys Ile Arg
 325 330 335
 Asn Leu Pro Lys Thr Glu Glu Arg Leu Ser Lys Leu Glu Lys Gln Val
 340 345 350
 Arg Asp Leu Ser Thr Pro Ser Leu Ala Glu Ile Pro Ser Glu Ile
 355 360 365

<210>317

<211>354

<212>PRT

<213>Chlamydia pneumoniae

<400>317

Arg Glu Gln Lys Gly Leu His His Met Asp Val Ser Arg Lys Ile Asn
 1 5 10 15
 Arg His Thr Gln Phe Tyr Val Asp Ser Ile Asp Gly Val Ile Lys Asn
 20 25 30
 Phe Asp His Lys Pro Ser Glu Asp Lys Ser Arg Asp His Glu Glu Leu
 35 40 45
 Glu Glu Lys Leu Leu Thr Ile Thr Lys Arg Ile Val Ala Ser Ala Gln
 50 55 60
 Glu Phe Gln Asn Arg Lys Thr Asp Ser Lys Asn Tyr Tyr Leu Lys Lys
 65 70 75 80
 Thr Gln Trp Leu Pro Phe Lys Asn Glu Glu Leu Glu Gln Thr Lys Glu
 85 90 95
 Leu Phe Ala Met Leu Thr Ser Met Asp Lys Lys Ile Ala Gln Leu Phe
 100 105 110
 Phe Tyr Ser Pro Gly Cys Ser Ser Asp Trp Val Glu Phe Thr Glu Val
 115 120 125
 Ile Cys His Leu Asn Asp Ser Ile Gly Leu Gly Gly Val Leu Leu Cys

130 135 140
 Cys Gly Leu Phe Glu Gln Gln Cys Glu His Val Val Thr Val Asn Lys
 145 150 155 160
 Lys Leu Asp Leu Pro Leu Leu Leu Gly Thr Thr Val Val Asn Ser Leu
 165 170 175
 Arg Tyr Tyr Leu Thr Tyr Arg Asn Ile Ser Leu Leu Asn Cys Gln Ser
 180 185 190
 Met Ser Glu Leu Gly Lys Glu Leu Gly Asp Val Leu Lys Gln His Gly
 195 200 205
 Val Ala Phe Thr Leu Ile Phe Lys Glu Ile Val Asp Ile Asp Leu Leu
 210 215 220
 Asn Tyr Val Lys Leu Ile Gln Gly Leu Lys Arg Ser Gly Asn Ile Gln
 225 230 235 240
 Ala Arg Ile Tyr Asp Asn Asp Val Pro Thr Leu Pro Ser Val Ser Ser
 245 250 255
 Ser Pro Ile Ala Leu Arg Tyr Ser Leu Ala Asn Thr Ile Arg Gly Leu
 260 265 270
 Ala Leu His Val Asp Phe Ser Ser Leu Lys Phe Ile Ser Pro Ser Ile
 275 280 285
 Leu Ser Asn Thr Glu His Thr Ala Lys Ala Leu Asn Ser Gly Gly Glu
 290 295 300
 Cys Phe Ile Phe Ser Asn Leu Asp Glu Phe Asn Leu Gly Met Lys Ile
 305 310 315 320
 Val Met Gln Leu Leu Arg Thr Gly Lys Ile Ser Pro Glu Ile Leu Asn
 325 330 335
 Lys Asn Ile Met Lys Ile Leu Met Ile Lys Arg Arg Val Arg Ser Leu
 340 345 350
 Tyr Ile

<210>318

<211>342

<212>PRT

<213>Chlamydia pneumoniae

<400>318

Met Asp Ser Ser Ala Pro Tyr Asn Ile Ala Ser Gln Gly Thr Glu Lys
 1 5 10 15
 Ser Thr Val Glu Arg Ile Leu Asp Leu Tyr Gly Pro Ala Ser Cys Ile
 20 25 30
 Lys Phe Leu Lys Gln Met Val Leu Ile Arg Glu Phe Glu Ala Arg Gly
 35 40 45
 Glu Glu Ala Tyr Leu Glu Gly Leu Val Gly Gly Phe Tyr His Ser Tyr
 50 55 60
 Ala Gly Gln Glu Ala Val Ala Thr Ala Ala Ile Ala Asn Thr Gly Leu
 65 70 75 80
 Asp Pro Trp Val Phe Ser Ser Tyr Arg Cys His Ala Leu Ala Ile Leu
 85 90 95
 Leu Asn Ile Pro Leu Gln Glu Ile Ala Ala Glu Leu Leu Gly Lys Glu
 100 105 110
 Thr Gly Cys Ala Leu Gly Arg Gly Gly Ser Met His Met Cys Gly Pro
 115 120 125
 Asn Phe Pro Gly Gly Phe Gly Ile Val Gly Gly Gln Ile Pro Leu Ala
 130 135 140
 Ala Gly Ala Ala Phe Thr Ile Lys Tyr Gln Glu Gln Lys Asn Arg Val
 145 150 155 160
 Ser Leu Cys Phe Ile Gly Asp Gly Ala Val Ala Gln Gly Val Phe His
 165 170 175
 Glu Thr Leu Asn Phe Val Ser Leu His Gln Leu Pro Leu Met Leu Ile
 180 185 190
 Ile Glu Asn Asn Gly Trp Ser Met Gly Thr Ser Leu Asn Arg Ala Val
 195 200 205
 Ala Lys Gln Pro Ile Ala Glu Ser Gln Gly Ser Ser Tyr Asp Ile Arg
 210 215 220
 Ala Val Thr Val Asn Gly Phe Asp Leu Phe Asn Ser Leu Leu Gly Phe
 225 230 235 240

PCT/LB98/01890

<210>319

<211>161

<212>PRT

<213>Chlamydia pneumoniae

<400>319

<210>320

<211>150

<212>PRT

<213>Chlamydia pneumoniae

<400>320

547

Ile Glu Lys Val Met Arg
 145 150
 <210>321
 <211>432
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>321
 Gly Lys Phe Val Ile Ser Leu Leu Lys Met Pro Lys Leu Ser Pro Thr
 1 5 10 45
 Met Glu Val Gly Thr Ile Val Lys Trp His Lys Lys Ser Asn Asp Gln
 20 25 30
 Val Ser Phe Gly Asp Val Ile Val Glu Ile Ser Thr Asp Lys Ala Ile
 35 40 45
 Leu Glu His Thr Ala Asn Glu Asp Gly Trp Ile Arg Glu Ile Leu Arg
 50 55 60
 His Glu Gly Glu Lys Ile Val Ile Gly Thr Pro Ile Ala Val Leu Ser
 65 70 75 80
 Thr Glu Ala Asn Glu Pro Phe Asn Leu Glu Leu Leu Pro Lys Thr
 85 90 95
 Glu Pro Ser Asn Leu Glu Ala Ser Pro Lys Gly Ser Ser Glu Glu Val
 100 105 110
 Ser Pro Ala Thr Thr Pro Gln Ala Ser Ala Thr Phe Thr Ala Val
 115 120 125
 Thr Phe Lys Pro Glu Pro Pro Leu Ser Ser Pro Leu Val Phe Lys His
 130 135 140
 Val Gly Thr Thr Asn Asn Leu Ser Pro Leu Ala Arg Gln Leu Ala Lys
 145 150 155 160
 Glu Lys Asn Ile Asp Val Ser Ser Ile Gln Gly Ser Gly Pro Gly Gly
 165 170 175
 Arg Ile Val Lys Lys Asp Leu Glu Lys Ala Pro Pro Lys Ser Ile Ala
 180 185 190
 Gly Phe Gly Tyr Pro Glu Ser Pro Glu Val Pro Pro Gly Ser Tyr His
 195 200 205
 Glu Glu Asn Leu Ser Pro Ile Arg Glu Val Ile Ala Ala Arg Leu Gln
 210 215 220
 Ala Ala Lys Ile Ser Ile Pro His Phe Tyr Val Arg Gln Gln Val Tyr
 225 230 235 240
 Ala Ser Pro Leu Leu Asn Leu Leu Lys Glu Leu Gln Ala Gln Gly Ile
 245 250 255
 Lys Leu Ser Ile Asn Asp Cys Ile Val Arg Ala Cys Ala Leu Ala Leu
 260 265 270
 Lys Glu Phe Pro Ser Ile Asn Ser Gly Phe Asn Ser Val Asp Asn Lys
 275 280 285
 Ile Val Arg Phe Asp Thr Ile Asp Ile Ser Ile Ala Val Ala Ile Pro
 290 295 300
 Asp Gly Ile Ile Thr Pro Ile Ile Arg Cys Ala Asp Arg Lys Asn Leu
 305 310 315 320
 Gly Met Ile Ser Ala Glu Ile Lys Ser Leu Ala Leu Lys Ala Arg Asn
 325 330 335
 Gln Ser Leu Gln Asp Thr Glu Tyr Lys Gly Gly Ser Phe Cys Val Ser
 340 345 350
 Asn Leu Gly Met Thr Gly Ile Thr Glu Phe Thr Ala Ile Val Asn Pro
 355 360 365
 Pro Gln Ala Ala Ile Leu Ala Val Gly Ser Val Thr Glu Gln Ala Leu
 370 375 380
 Val Leu Asp Gly Glu Ile Thr Ile Gly Ser Thr Cys Asn Leu Thr Leu
 385 390 395 400
 Ser Val Asp His Arg Val Ile Asp Gly Tyr Pro Ala Ala Met Phe Met
 405 410 415
 Lys Arg Leu Gln Lys Ile Leu Glu Ala Pro Ala Val Leu Leu Leu Asn
 420 425 430
 <210>322
 <211>104
 <212>PRT

<213>Chlamydia pneumoniae

<400>322

Ile Asp Glu Thr Ser Met Phe Phe Ser Phe Ala Ser Cys Leu Ala Asn
 1 5 10 15
 Gly Glu Arg Leu Phe Val Val Pro Thr Cys Leu Lys Thr Lys Gly Glu
 20 25 30
 Glu Arg Gly Gly Ser Gly Leu Lys Val Thr Ala Val Asn Val Ala Glu
 35 40 45
 Ala Ala Cys Gly Val Val Ala Gly Glu Thr Ser Ser Glu Glu Pro Phe
 50 55 60
 Gly Asp Ala Ser Arg Leu Glu Gly Ser Val Leu Gly Arg Ser Ser Ser
 65 70 75 80
 Arg Leu Lys Gly Ser Leu Ala Ser Val Glu Ser Thr Ala Ile Gly Val
 85 90 95
 Pro Ile Thr Ile Phe Ser Pro Ser
 100

<210>323

<211>828

<212>PRT

<213>Chlamydia pneumoniae

<400>323

Asn Gly Cys Ile Val Glu Asp Phe Ser Ser Phe Asp Lys Asn Lys Val
 1 5 10 15
 Ser Val Asp Ser Met Lys Arg Ala Ile Leu Asp Arg Leu Tyr Leu Ser
 20 25 30
 Val Val Gln Ser Pro Glu Ser Ala Ser Pro Arg Asp Ile Phe Thr Ala
 35 40 45
 Val Ala Lys Thr Val Met Glu Trp Leu Ala Lys Gly Trp Leu Lys Thr
 50 55 60
 Gln Asn Gly Tyr Tyr Lys Asn Asp Val Lys Arg Val Tyr Tyr Leu Ser
 65 70 75 80
 Met Glu Phe Leu Leu Gly Arg Ser Leu Thr Ser Asn Leu Leu Asn Leu
 85 90 95
 Gly Ile Leu Asp Leu Val Arg Lys Ala Leu Lys Thr Leu Asn Tyr Asp
 100 105 110
 Phe Asp His Leu Val Glu Met Glu Ser Asp Ala Gly Leu Gly Asn Gly
 115 120 125
 Gly Leu Gly Arg Leu Ala Ala Cys Tyr Leu Asp Ser Met Ala Thr Leu
 130 135 140
 Ala Val Pro Ala Tyr Gly Tyr Gly Ile Arg Tyr Asp Tyr Gly Ile Phe
 145 150 155 160
 Asp Gln Arg Ile Val Asn Gly Tyr Gln Glu Ala Pro Asp Glu Trp
 165 170 175
 Leu Arg Tyr Gly Asn Pro Trp Glu Ile Cys Arg Gly Glu Tyr Leu Tyr
 180 185 190
 Pro Val Arg Phe Tyr Gly Arg Val Ile His Tyr Thr Asp Ser Arg Gly
 195 200 205
 Lys Gln Val Ala Asp Leu Val Asp Thr Gln Glu Val Leu Ala Met Ala
 210 215 220
 Tyr Asp Ile Pro Ile Pro Gly Tyr Gly Asn Asp Thr Val Asn Ser Leu
 225 230 235 240
 Arg Leu Trp Gln Ala Gln Ser Pro Arg Gly Phe Glu Phe Ser Tyr Phe
 245 250 255
 Asn His Gly Asn Tyr Ile Gln Ala Ile Glu Asp Ile Ala Leu Ile Glu
 260 265 270
 Asn Ile Ser Arg Val Leu Tyr Pro Asn Asp Ser Ile Thr Glu Gly Gln
 275 280 285
 Glu Leu Arg Leu Lys Gln Glu Tyr Phe Leu Val Ser Ala Thr Ile Gln
 290 295 300
 Asp Ile Ile Arg Arg Tyr Thr Lys Thr His Ile Cys Leu Asp Asn Leu
 305 310 315 320
 Ala Asp Lys Val Val Gln Leu Asn Asp Thr His Pro Ala Leu Gly
 325 330 335
 Ile Ala Glu Met Met His Ile Leu Val Asp Arg Glu Glu Leu Pro Trp

	340		345		350
Asp Lys Ala Trp	Glu Met Thr Thr Val Ile Phe Asn Tyr Thr Asn His				
	355		360		365
Thr Ile Leu Pro	Glu Ala Leu Glu Arg Trp Pro Leu Asp Leu Phe Ser				
	370		375		380
Lys Leu Leu Pro	Arg His Leu Glu Ile Ile Tyr Glu Ile Asn Ser Arg				
	385		390		395
Trp Leu Glu Lys	Val Gly Ser Arg Tyr Pro Lys Asn Asp Asp Lys Arg				
	405		410		415
Arg Ser Leu Ser	Ile Val Glu Glu Gly Tyr Gln Lys Arg Ile Asn Met				
	420		425		430
Ala Asn Leu Ala	Val Val Gly Ser Ala Lys Val Asn Gly Val Ser Ser				
	435		440		445
Phe His Ser Gln	Leu Ile Lys Asp Thr Leu Phe Lys Glu Phe Tyr Glu				
	450		455		460
Phe Phe Pro Glu	Lys Phe Ile Asn Val Thr Asn Gly Val Thr Pro Arg				
	465		470		475
Arg Trp Ile Ala	Leu Cys Asn Pro Arg Leu Ser Lys Leu Leu Asn Glu				
	485		490		495
Thr Ile Gly Asp	Arg Tyr Ile Ile Asp Leu Ser His Leu Ser Leu Ile				
	500		505		510
Arg Ser Phe Ala	Glu Asp Ser Gly Phe Arg Asp His Trp Lys Gly Val				
	515		520		525
Lys Leu Lys Asn	Lys Gln Asp Leu Thr Ser Arg Ile Tyr Asn Glu Val				
	530		535		540
Gly Glu Ile Val	Asp Pro Asn Ser Leu Phe Asp Cys His Ile Lys Arg				
	545		550		555
Ile His Glu Tyr	Lys Arg Gln Leu Met Asn Ile Leu Arg Val Ile Tyr				
	565		570		575
Val Tyr Asn Asp	Leu Lys Glu Asn Pro Asn Gln Asp Val Val Pro Thr				
	580		585		590
Thr Val Ile Phe	Ser Gly Lys Ala Ala Pro Gly Tyr Val Met Ala Lys				
	595		600		605
Leu Ile Ile Lys	Leu Ile Asn Ser Val Ala Asp Val Val Asn Gln Asp				
	610		615		620
Ser Arg Val Asn	Asp Lys Leu Lys Val Leu Phe Leu Pro Asn Tyr Arg				
	625		630		635
Val Ser Met Ala	Glu His Ile Ile Pro Gly Thr Asp Leu Ser Glu Gln				
	645		650		655
Ile Ser Thr Ala	Gly Met Glu Ala Ser Gly Thr Gly Asn Met Lys Phe				
	660		665		670
Ala Leu Asn Gly	Ala Leu Thr Ile Gly Thr Met Asp Gly Ala Asn Ile				
	675		680		685
Glu Met Ala Glu	His Ile Gly Lys Glu Asn Met Phe Ile Phe Gly Leu				
	690		695		700
Leu Glu Glu Gln	Ile Val Gln Leu Arg Arg Glu Tyr Cys Pro Gln Thr				
	705		710		715
Ile Cys Asp Lys	Asn Pro Lys Ile Arg Gln Val Leu Asp Leu Leu Glu				
	725		730		735
Gln Gly Phe Phe	Asn Ser Asn Asp Lys Asp Leu Phe Lys Pro Ile Val				
	740		745		750
His Arg Leu Leu	His Glu Gly Asp Pro Phe Phe Val Leu Ala Asp Leu				
	755		760		765
Glu Ser Tyr Ile	Ala Ala His Glu Asn Val Asn Lys Leu Phe Lys Glu				
	770		775		780
Pro Asp Ser Trp	Thr Lys Ile Ser Ile Tyr Asn Thr Ala Gly Met Gly				
	785		790		795
Phe Phe Ser Ser	Asp Arg Ala Ile Gln Asp Tyr Ala Arg Asp Ile Trp				
	805		810		815
His Val Pro Thr	Lys Ser Cys Ser Gly Glu Gly Asn				
	820		825		

<210>324

<211>86

<212>PRT

<213>Chlamydia pneumoniae

<400>324

Val Phe Ser His Pro Leu Ala Asn His Ser Ile Thr Val Phe Ala Thr
 1 5 10 15
 Ala Val Lys Ile Ser Leu Gly Asp Ala Asp Ser Gly Asp Cys Thr Thr
 20 25 30
 Leu Lys Tyr Arg Arg Ser Lys Ile Ala Arg Phe Ile Glu Ser Thr Leu
 35 40 45
 Thr Leu Phe Leu Ser Lys Leu Glu Lys Ser Ser Thr Met Gln Pro Phe
 50 55 60
 Gln Ile Pro Ser Arg Thr Leu His Met Arg Asn Leu Lys Lys Lys Lys
 65 70 75 80
 Glu Leu Arg Leu Gly Lys
 85

<210>325

<211>128

<212>PRT

<213>Chlamydia pneumoniae

<400>325

Phe Phe Thr Gln Glu Asn Asn Met Ala Thr Val Ala Gln Thr Pro Gln
 1 5 10 15
 Thr Thr Gln Pro Gln Pro Ser Val Ser His Lys Ala Thr His Arg Tyr
 20 25 30
 Cys Ser Trp Val Phe Phe Lys Pro Ile Leu Val Ser Leu Gly Leu Leu
 35 40 45
 Leu Ala Ser Leu Thr Thr Leu Gly Leu Val Ile Ala Ser Gly Val Thr
 50 55 60
 Leu Ser Leu Gly Ile Gly His Cys Ser Cys Tyr Thr Asp Ser Thr Ala
 65 70 75 80
 Gly Ile Ala Leu Val Leu Ala Phe Asn His Ile Arg Gln Phe Lys Gln
 85 90 95
 Ala Arg Thr Ala Glu Leu Asn Ser Met Lys Met Ile Ser Ala Pro Ala
 100 105 110
 Ala Ala Thr Val Gln Lys Gln Lys Leu Glu Asp Arg Tyr Ser Ser Lys
 115 120 125

<210>326

<211>448

<212>PRT

<213>Chlamydia pneumoniae

<400>326

Phe Met Arg Ala Trp Glu Glu Phe Leu Leu Leu Gln Glu Lys Glu Ile
 1 5 10 15
 Gly Thr Asn Thr Val Asp Lys Trp Leu Arg Ser Leu Lys Val Leu Cys
 20 25 30
 Phe Asp Ala Cys Asn Leu Tyr Leu Glu Ala Gln Asp Ser Phe Gln Ile
 35 40 45
 Thr Trp Phe Glu Glu His Ile Arg His Lys Val Lys Ser Gly Leu Val
 50 55 60
 Asn Asn Asn Asn Lys Pro Ile Arg Val His Val Thr Ser Val Asp Lys
 65 70 75 80
 Ala Ala Pro Phe Tyr Lys Glu Lys Gln Met Gln Gln Glu Lys Thr Ala
 85 90 95
 Tyr Phe Thr Met His Tyr Gly Ser Val Asn Pro Glu Met Thr Phe Ser
 100 105 110
 Asn Phe Leu Val Thr Pro Glu Asn Asp Leu Pro Phe Arg Val Leu Gln
 115 120 125
 Glu Phe Thr Lys Ser Pro Asp Glu Asn Gly Gly Val Thr Phe Asn Pro
 130 135 140
 Ile Tyr Leu Phe Gly Pro Glu Gly Ser Gly Lys Thr His Leu Met Gln
 145 150 155 160
 Ser Ala Ile Ser Val Leu Arg Glu Ser Gly Gly Lys Ile Leu Tyr Val
 165 170 175
 Ser Ser Asp Leu Phe Thr Glu His Leu Val Ser Ala Ile Arg Ser Gly
 180 185 190

Glu Met Gln Lys Phe Arg Ser Phe Tyr Arg Asn Ile Asp Ala Leu Phe
 195 200 205
 Ile Glu Asp Ile Glu Val Phe Ser Gly Lys Ser Ala Thr Gln Glu Glu
 210 215 220
 Phe Phe His Thr Phe Asn Ser Leu His Ser Glu Gly Lys Leu Ile Val
 225 230 235 240
 Val Ser Ser Ser Tyr Ala Pro Val Asp Leu Val Ala Val Glu Asp Arg
 245 250 255
 Leu Ile Ser Arg Phe Glu Trp Gly Val Ala Ile Pro Ile His Pro Leu
 260 265 270
 Val Gln Glu Gly Leu Arg Ser Phe Leu Met Arg Gln Val Glu Arg Leu
 275 280 285
 Ser Ile Arg Ile Gln Glu Thr Ala Leu Asp Phe Leu Ile Tyr Ala Leu
 290 295 300
 Ser Ser Asn Val Lys Thr Leu Leu His Ala Leu Asn Leu Leu Ala Lys
 305 310 315 320
 Arg Val Met Tyr Lys Lys Leu Ser His Gln Leu Leu Tyr Glu Asp Asp
 325 330 335
 Val Lys Thr Leu Leu Lys Asp Val Leu Glu Ala Ala Gly Ser Val Arg
 340 345 350
 Leu Thr Pro Leu Lys Ile Ile Arg Asn Val Ala Gln Tyr Tyr Gly Val
 355 360 365
 Ser Gln Glu Ser Ile Leu Gly Arg Ser Gln Ser Arg Glu Tyr Val Leu
 370 375 380
 Pro Arg Gln Val Ala Met Tyr Phe Cys Arg Gln Lys Leu Ser Leu Ser
 385 390 395 400
 Tyr Val Arg Ile Gly Asp Val Phe Ser Arg Asp His Ser Thr Val Ile
 405 410 415
 Ser Ser Ile Arg Leu Ile Glu Gln Lys Ile Glu Glu Asn Ser His Asp
 420 425 430
 Ile His Met Ala Ile Gln Asp Ile Ser Xaa Glu Phe Lys Phe Leu Ala
 435 440 445

<210>327

<211>808

<212>PRT

<213>Chlamydia pneumoniae

<400>327

Tyr Phe Asp Leu Leu Ser Leu Ile Phe Arg Val Tyr Gln Met Asn Lys
 1 5 10 15
 Arg Thr Leu Leu Phe Val Ser Leu Ile Gly Ile Ala Phe Val Gly Cys
 20 25 30
 Gln Ile Phe Phe Gly Tyr Asn Glu Phe Arg Ser Cys Lys Asn Leu Ala
 35 40 45
 Glu Lys Gln Arg Lys Ile Ser Glu Gln Thr Leu Ala Ala Val Glu Ser
 50 55 60
 Val Gly Leu Ser Val Ala Ser Trp Asp Thr Asp Val Asn Gly Glu Glu
 65 70 75 80
 His Lys Asn Asn Tyr Ala Val Arg Val Gly Asp Lys Leu Phe Leu Leu
 85 90 95
 His Asn Gly Glu Ala Ala Gln Ser Val Tyr Ser Ser Gly Glu Ser Trp
 100 105 110
 Ser Phe Val Asp His Lys Cys Gly Phe Asp Asn Ile His Leu Ala Leu
 115 120 125
 Tyr Arg Gln Gln Gly Ser Ser Phe Asn Pro Thr Asn Thr Gly Lys Val
 130 135 140
 Phe Leu Pro Thr Asn His Glu Gly Leu Pro Val Leu Val Val Glu Phe
 145 150 155 160
 Arg Asn Asn Lys Glu Pro Leu Val Phe Leu Gly Glu Tyr Ala Gln Gly
 165 170 175
 Arg Ile Ser Asn Lys Asp Ser Thr Ile Phe Gly Thr Ala Leu Val Phe
 180 185 190
 Trp Arg Ser Gly Ser Asp Tyr Ile Pro Leu Gly Leu Tyr Asp Ser Arg
 195 200 205
 Glu Glu Lys Leu Val Ser Leu Asp Leu Pro Ile Thr Arg Ala Val Ile

210 215 220
 Phe Gly Asn Asp Gln Asp Ser Ala Lys Ser Ser Asp Thr Ala Asn His
 225 230 235 240
 Tyr Val Leu Phe Asn Asp Tyr Met Gln Ile Val Ser Glu Glu Ser
 245 250 255
 Gly Ser Ile Glu Gly Ile Asn Leu Pro Phe Ala Ser Thr Asn Asn Lys
 260 265 270
 Ser Ile Val Asn Glu Ile Gly Phe Asp Arg Asp Leu Ala Ser Glu Lys
 275 280 285
 Ser Pro Glu Ala Leu Phe Pro Gly Leu Ser Ser Lys Leu Pro Asp Gly
 290 295 300
 Gln Gln Ala Lys Asn Ser Ile Gly Gly Tyr Tyr Pro Leu Leu Arg Arg
 305 310 315 320
 Gly Leu Leu Ser Asp Ser Lys Lys Leu Leu Pro Leu Glu Tyr His Ala
 325 330 335
 Leu Asn Val Val Ser Gly Arg Glu Leu Ala Thr Pro Val Ala Leu Arg
 340 345 350
 Tyr Arg Val Leu Ser Tyr Thr Pro His Ser Ile Gln Leu Glu Ser Leu
 355 360 365
 Asp Arg Ser Val Gln Lys Val Tyr Lys Leu Pro Glu Asn Pro Glu Glu
 370 375 380
 Lys Pro Tyr Val Phe Glu Thr Ala Ile Thr Leu Thr Lys Glu Thr Glu
 385 390 395 400
 Asp Val Trp Val Thr Ser Gly Val Pro Glu Val Glu Ile Met Ser Asn
 405 410 415
 Ala Ser Ala Pro Thr Ile Lys Tyr Arg Val Ile Lys Lys Asn Lys Gly
 420 425 430
 Ser Leu Asp Lys Val Lys Leu Pro Lys Val Lys Glu Pro Leu Ala Val
 435 440 445
 Arg Arg Gly Val Tyr Pro Gln Trp Ile Leu Asn Ser Asn Gly Tyr Phe
 450 455 460
 Gly Ile Ile Leu Thr Pro Leu Ser Glu Ile Ala Ser Gly Tyr Gly Ser
 465 470 475 480
 Leu Tyr Ile Ser Gly Ser Thr Ala Pro Thr Arg Leu Ser Ala Ile Ser
 485 490 495
 Pro Lys Asn Gln Leu Tyr Pro Val Ser Lys Tyr Pro Gly Tyr Glu Thr
 500 505 510
 Leu Leu Pro Leu Pro Lys Asp Ala Gly Thr His Arg Phe Leu Val Tyr
 515 520 525
 Ala Gly Pro Leu Ala Glu Pro Thr Leu Lys Val Leu Asp Lys Thr Ile
 530 535 540
 Thr Gln Glu Lys Gly Glu Asn Pro Glu Tyr Leu Asp Ser Ile Ser Phe
 545 550 555 560
 Arg Gly Val Phe Ala Phe Ile Thr Ala Pro Phe Ala Ala Leu Leu Phe
 565 570 575
 Ile Ile Met Lys Phe Phe Lys Leu Val Thr Gly Ser Trp Gly Ile Ser
 580 585 590
 Ile Ile Leu Leu Thr Val Phe Leu Lys Leu Leu Leu Tyr Pro Leu Ser
 595 600 605
 Ala Trp Ser Ile Arg Ser Xaa Arg Arg Met Xaa Ile Leu Ser Pro Tyr
 610 615 620
 Ile Gln Gln Ile Gln Gln Lys Tyr Lys Asn Glu Pro Lys Arg Ala Gln
 625 630 635 640
 Met Glu Ile Met Gly Leu Tyr Lys Thr Asn Lys Val Asn Pro Ile Thr
 645 650 655
 Gly Cys Leu Pro Leu Leu Ile Gln Leu Pro Phe Leu Ile Ala Met Phe
 660 665 670
 Asp Leu Leu Lys Ser Ser Phe Leu Leu Arg Gly Ala Ser Phe Ile Pro
 675 680 685
 Gly Trp Ile Asp Asn Leu Thr Ala Pro Asp Val Leu Phe Ser Trp Gln
 690 695 700
 Thr Ser Ile Trp Phe Ile Gly Asn Glu Phe His Leu Leu Pro Ile Leu
 705 710 715 720
 Leu Gly Ile Val Met Phe Leu Gln Gln Lys Val Thr Ser Leu His Lys

725 730 735
 Lys Gly Pro Val Thr Asp Gln Gln Lys Gln Gln Gln Val Met Gly Asn
 740 745 750
 Met Met Ala Ile Leu Phe Thr Ala Met Phe Tyr Asn Phe Pro Ser Gly
 755 760 765
 Leu Asn Ile Tyr Trp Leu Ser Ser Met Ile Leu Gly Val Val Gln Gln
 770 775 780
 Trp Ile Thr Asn Lys Ile Leu Asp Ser Lys His Leu Lys Asn Glu Val
 785 790 795 800
 Val Leu Asn Asn Lys Lys His Arg
 805

<210>328

<211>203

<212>PRT

<213>Chlamydia pneumoniae

<400>328

Phe Phe Met Asp Gly Val Phe Thr Tyr Asn Ile Leu Lys Arg Ser Phe
 1 5 10 15
 Lys Tyr Gly Thr Glu Ala Cys Arg Val Met Glu Ala Phe Phe Gly Phe
 20 25 30
 Leu Leu Trp Ala Ala Ile Phe Ser Trp Ile Tyr Lys Lys Lys Ile Ser
 35 40 45
 Lys Leu Thr Phe Leu Phe Leu Thr Asp Leu Cys Gly Ser Val Phe Gly
 50 55 60
 Ile Ala Ala Phe Phe Ile Arg Leu Gly Asn Phe Trp Asn Gln Glu Ile
 65 70 75 80
 Val Gly Thr Pro Thr Ser Leu Pro Trp Gly Val Val Phe Ser Asp Pro
 85 90 95
 Met Gln Gly Val Gln Gly Val Pro Val His Pro Val Gln Leu Tyr Glu
 100 105 110
 Gly Ile Ser Tyr Leu Val Val Ser Gly Ile Leu Tyr Phe Leu Ser Tyr
 115 120 125
 Lys Arg Tyr Leu His Leu Gly Lys Gly Tyr Val Thr Ser Ile Ala Cys
 130 135 140
 Ile Ser Val Ala Phe Ile Arg Phe Phe Ala Glu Tyr Val Lys Ser His
 145 150 155 160
 Gln Gly Lys Val Leu Ala Glu Asp Cys Leu Leu Thr Ile Gly Gln Ile
 165 170 175
 Leu Ser Ile Pro Leu Phe Leu Phe Gly Val Ala Leu Leu Ile Ile Cys
 180 185 190
 Ser Leu Lys Ala Arg Arg His Arg Ser His Ile
 195 200

<210>329

<211>153

<212>PRT

<213>Chlamydia pneumoniae

<400>329

Cys Thr Met Ala Arg Asn Ile Lys Tyr Phe Leu Ile Leu Phe Pro Gly
 1 5 10 15
 Ile Leu Trp Ile Ser Ala Gly Met Lys Leu Leu Leu Lys Ala Thr Ala
 20 25 30
 Ile Ala Leu Asp Pro Leu Ser Ser Phe Phe Thr Tyr Cys Leu Leu Ser
 35 40 45
 Met Val Ser Trp Gly Leu Ala Ser Leu Lys His Arg Tyr Leu Leu Ser
 50 55 60
 Lys Thr Ile Arg Lys Gln Leu Ser Leu Ser Ser Glu Phe Phe Ser Gln
 65 70 75 80
 Lys Ile Thr Trp Ile Ala Tyr Ile Lys Gln Thr Phe Ile Ser Arg Arg
 85 90 95
 Phe Leu Ile Met Val Ile Met Ile Ala Phe Ser Leu Val Leu Arg Arg
 100 105 110
 Tyr Ile Ser Asn Pro Gln Ala Leu Phe Val Ile Arg Ala Thr Val Gly
 115 120 125
 Tyr Ala Leu Ile Lys Thr Ala Ile Ala Tyr Phe Ser Lys Leu Gln Asn

130 135 140
 Ala Leu Met Glu Asn Pro Glu Gly Asn
 145 150
 <210>330
 <211>122
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>330
 Met Glu Ile Ile His Ile Gly Thr Asp Ile Ile Glu Ile Ser Arg Ile
 1 5 10 15
 Arg Glu Ala Ile Ala Thr His Gly Asn Arg Leu Leu Asn Arg Ile Phe
 20 25 30
 Thr Glu Ala Glu Gln Lys Tyr Cys Leu Glu Lys Thr Asp Pro Ile Pro
 35 40 45
 Ser Phe Ala Gly Arg Phe Ala Gly Lys Glu Ala Val Ala Lys Ala Leu
 50 55 60
 Gly Thr Gly Ile Gly Ser Val Val Ala Trp Lys Asp Ile Glu Val Phe
 65 70 75 80
 Lys Val Ser His Gly Pro Glu Val Leu Leu Pro Ser His Val Tyr Ala
 85 90 95
 Lys Ile Gly Ile Ser Lys Val Ile Leu Ser Ile Ser His Cys Lys Glu
 100 105 110
 Tyr Ala Thr Ala Thr Ala Ile Ala Leu Ala
 115 120
 <210>331
 <211>311
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>331
 Met Ile His Ser Arg Leu Ile Ile Ile Gly Ser Gly Pro Ser Gly Tyr
 1 5 10 15
 Thr Ala Ala Ile Tyr Ala Ser Arg Ala Leu Leu His Pro Leu Leu Phe
 20 25 30
 Glu Gly Phe Phe Ser Gly Ile Ser Gly Gly Gln Leu Met Thr Thr Thr
 35 40 45
 Glu Val Glu Asn Phe Pro Gly Phe Pro Glu Gly Ile Leu Gly Pro Lys
 50 55 60
 Leu Met Asn Asn Met Lys Glu Gln Ala Val Arg Phe Gly Thr Lys Thr
 65 70 75 80
 Leu Ala Gln Asp Ile Ile Ser Val Asp Phe Ser Val Arg Pro Phe Ile
 85 90 95
 Leu Lys Ser Lys Glu Glu Thr Tyr Ser Cys Asp Ala Cys Ile Ile Ala
 100 105 110
 Thr Gly Ala Ser Ala Lys Arg Leu Glu Ile Pro Gly Ala Gly Asn Asp
 115 120 125
 Glu Phe Trp Gln Lys Gly Val Thr Ala Cys Ala Val Cys Asp Gly Ala
 130 135 140
 Ser Pro Ile Phe Lys Asn Lys Asp Leu Tyr Val Ile Gly Gly Gly Asp
 145 150 155 160
 Ser Ala Leu Glu Glu Ala Leu Tyr Leu Thr Arg Tyr Gly Ser His Val
 165 170 175
 Tyr Val Val His Arg Arg Asp Lys Leu Arg Ala Ser Lys Ala Met Glu
 180 185 190
 Ala Arg Ala Gln Asn Asn Glu Lys Ile Thr Phe Leu Trp Asn Ser Glu
 195 200 205
 Ile Val Lys Ile Ser Gly Asp Ser Ile Val Arg Ser Val Asp Ile Lys
 210 215 220
 Asn Val Gln Thr Gln Glu Ile Thr Thr Arg Glu Ala Ala Gly Val Phe
 225 230 235 240
 Phe Ala Ile Gly His Lys Pro Asn Thr Asp Phe Leu Gly Gly Gln Leu
 245 250 255
 Thr Leu Asp Glu Ser Gly Tyr Ile Val Thr Glu Lys Gly Thr Ser Lys
 260 265 270
 Thr Ser Val Pro Gly Val Phe Ala Ala Gly Asp Val Gln Asp Lys Tyr

275 280 285
 Tyr Arg Gln Ala Val Thr Ser Ala Gly Gly Gly Cys Ile Ala Ala Leu
 290 295 300
 Asp Ala Glu Arg Phe Leu Gly
 305 310
 <210>332
 <211>580
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>332
 Met Pro Lys Gln Ala Glu Tyr Thr Trp Gly Ser Lys Lys Ile Leu Asp
 1 5 10 15
 Asn Ile Glu Cys Leu Thr Glu Asp Val Ala Glu Phe Lys Asp Leu Leu
 20 25 30
 Tyr Thr Ala His Arg Ile Thr Ser Ser Glu Glu Glu Ser Asp Asn Glu
 35 40 45
 Ile Gln Pro Gly Ala Ile Leu Lys Gly Thr Val Val Asp Ile Asn Lys
 50 55 60
 Asp Phe Val Val Val Asp Val Gly Leu Lys Ser Glu Gly Val Ile Pro
 65 70 75 80
 Met Ser Glu Phe Ile Asp Ser Ser Glu Gly Leu Val Leu Gly Ala Glu
 85 90 95
 Val Glu Val Tyr Leu Asp Gln Ala Glu Asp Glu Glu Gly Lys Val Val
 100 105 110
 Leu Ser Arg Glu Lys Ala Thr Arg Gln Arg Gln Trp Glu Tyr Ile Leu
 115 120 125
 Ala His Cys Glu Glu Gly Ser Ile Val Lys Gly Gln Ile Thr Arg Lys
 130 135 140
 Val Lys Gly Gly Leu Ile Val Asp Ile Gly Met Glu Ala Phe Leu Pro
 145 150 155 160
 Gly Ser Gln Ile Asp Asn Lys Lys Ile Lys Asn Leu Asp Asp Tyr Val
 165 170 175
 Gly Lys Val Cys Glu Phe Lys Ile Leu Lys Ile Asn Val Glu Arg Arg
 180 185 190
 Asn Ile Val Val Ser Arg Arg Glu Leu Leu Glu Ala Glu Arg Ile Ser
 195 200 205
 Lys Lys Ala Glu Leu Ile Glu Gln Ile Ser Ile Gly Glu Tyr Arg Lys
 210 215 220
 Gly Val Val Lys Asn Ile Thr Asp Phe Gly Val Phe Leu Asp Leu Asp
 225 230 235 240
 Gly Ile Asp Gly Leu Leu His Ile Thr Asp Met Thr Trp Lys Arg Ile
 245 250 255
 Arg His Pro Ser Glu Met Val Glu Leu Asn Gln Glu Leu Glu Val Ile
 260 265 270
 Ile Leu Ser Val Asp Lys Glu Lys Gly Arg Val Ala Leu Gly Leu Lys
 275 280 285
 Gln Lys Glu His Asn Pro Trp Glu Asp Ile Glu Lys Lys Tyr Pro Pro
 290 295 300
 Gly Lys Arg Val Leu Gly Lys Ile Val Lys Leu Leu Pro Tyr Gly Ala
 305 310 315 320
 Phe Ile Glu Ile Glu Glu Gly Ile Glu Gly Leu Ile His Ile Ser Glu
 325 330 335
 Met Ser Trp Val Lys Asn Ile Val Asp Pro Ser Glu Val Val Asn Lys
 340 345 350
 Gly Asp Glu Val Glu Ala Ile Val Leu Ser Ile Gln Lys Asp Glu Gly
 355 360 365
 Lys Ile Ser Leu Gly Leu Lys Gln Thr Glu Arg Asn Pro Trp Asp Asn
 370 375 380
 Ile Glu Glu Lys Tyr Pro Ile Gly Leu His Val Asn Ala Glu Ile Lys
 385 390 395 400
 Asn Leu Thr Asn Tyr Gly Ala Phe Val Glu Leu Glu Pro Gly Ile Glu
 405 410 415
 Gly Leu Ile His Ile Ser Asp Met Ser Trp Ile Lys Lys Val Ser His
 420 425 430

Pro Ser Glu Leu Phe Lys Lys Gly Asn Ser Val Glu Ala Val Ile Leu
 435 440 445
 Ser Val Asp Lys Glu Ser Lys Lys Ile Thr Leu Gly Val Lys Gln Leu
 450 455 460
 Ser Ser Asn Pro Trp Asn Glu Ile Glu Ala Met Phe Pro Ala Gly Thr
 465 470 475 480
 Val Ile Ser Gly Val Val Thr Lys Ile Thr Ala Phe Gly Ala Phe Val
 485 490 495
 Glu Leu Gln Asn Gly Ile Glu Gly Leu Ile His Val Ser Glu Leu Ser
 500 505 510
 Asp Lys Pro Phe Ala Lys Ile Glu Asp Ile Ile Ser Ile Gly Glu Asn
 515 520 525
 Val Ser Ala Lys Val Ile Lys Leu Asp Pro Asp His Lys Lys Val Ser
 530 535 540
 Leu Ser Val Lys Glu Tyr Leu Ala Asp Asn Ala Tyr Asp Gln Asp Ser
 545 550 555 560
 Arg Thr Glu Leu Asp Phe Lys Asp Ser Gln Gly Pro Lys Glu Arg Lys
 565 570 575
 Lys Lys Gly Lys
 580

<210>333

<211>225

<212>PRT

<213>Chlamydia pneumoniae

<400>333

Met Asn Lys Asn Leu Val Ala Ile Phe Asp Tyr Met Glu Lys Glu Lys
 1 5 10 15
 Gly Ile Gln Arg Ser Thr Ile Ile Gly Ala Ile Glu Ser Ala Leu Lys
 20 25 30
 Ile Ala Ala Lys Lys Thr Leu Arg Asp Asp Ala Asn Ile Ser Val Asn
 35 40 45
 Ile Asn Ser Arg Thr Gly Asp Ile Glu Val Phe Cys Glu Lys Glu Ile
 50 55 60
 Val Glu Ile Cys Gln Asn Pro Ser Lys Glu Ile Pro Leu Asp Lys Ala
 65 70 75 80
 Arg Glu Tyr Asp Pro Asp Cys Gln Ile Gly Gln Tyr Met Asp Val Pro
 85 90 95
 Phe Val Ser Asp Asn Phe Gly Arg Ile Ala Ala His Ala Ala Arg Gln
 100 105 110
 Ile Ile Gly Gln Lys Leu Arg His Ala Glu Arg Asp Val Ile Tyr Glu
 115 120 125
 Glu Tyr Arg His Arg Val Asn Glu Thr Leu Ser Gly Val Val Lys Arg
 130 135 140
 Phe Ala Lys Gly Ser Asn Leu Ile Ile Asp Leu Gly Lys Val Glu Ala
 145 150 155 160
 Ile Leu Pro Thr Arg Phe Tyr Pro Lys Thr Glu Lys His Lys Ile Gly
 165 170 175
 Asp Lys Ile Tyr Ala Leu Leu Tyr Glu Val Gln Glu Ser Glu Asn Gly
 180 185 190
 Gly Ala Glu Val Ile Leu Ser Arg Ser His Ala Glu Phe Val Lys Gln
 195 200 205
 Leu Phe Ile Ser Arg Ser Pro Arg Thr Arg Arg Arg Phe Cys Gly Asp
 210 215 220

Cys

225

<210>334

<211>174

<212>PRT

<213>Chlamydia pneumoniae

<400>334

Lys Ile Ser Phe Arg Glu Leu Asn Asp Glu Lys Ile Asp Ile Val Asn
 1 5 10 15
 Tyr Ser Pro Val Ser Thr Glu Leu Leu Gln Asn Leu Leu Tyr Pro Ile
 20 25 30

Glu Ile Gln Lys Ile Ala Ile Leu Glu Asp Asp Lys Val Ile Ala Ile
 35 40 45
 Val Val Asn Asp Ala Asp Tyr Ala Thr Val Ile Gly Lys Arg Gly Ile
 50 55 60
 Asn Ala Arg Leu Ile Ser His Ile Leu Asp Tyr Glu Leu Glu Val Gln
 65 70 75 80
 Arg Met Ser Glu Tyr Asn Lys Leu Leu Glu Ile Gln Arg Leu Gln Leu
 85 90 95
 Ala Glu Phe Asp Ser Pro His Leu Asp Gln Pro Leu Glu Met Glu Gly
 100 105 110
 Ile Ser Lys Leu Val Ile Gln Asn Leu Glu His Ala Gly Tyr Asp Thr
 115 120 125
 Ile Arg Arg Val Leu Leu Ala Ser Ala Asn Asp Leu Ala Ser Val Pro
 130 135 140
 Gly Ile Ser Leu Glu Leu Ala Tyr Lys Ile Leu Glu Gln Val Ser Lys
 145 150 155 160
 Tyr Gly Glu Ser Lys Val Asp Glu Lys Pro Glu Ile Glu Asp
 165 170

<210>335

<211>761

<212>PRT

<213>Chlamydia pneumoniae

<400>335

Leu Leu Ile Arg Ser Leu Ser Lys Ser Ala Asn Met Glu Lys Val Lys
 1 5 10 15
 Leu Thr Lys Asn Leu Lys Leu Lys Ile Lys Asn Ala Gln Leu Thr Lys
 20 25 30
 Ala Ala Gly Leu Asp Lys Leu Lys Gln Lys Leu Ala Gln Ala Gly Ser
 35 40 45
 Ser Glu Ala Lys Ser Ser Ser Glu Lys Pro Ser Ala Lys Glu Lys Ser
 50 55 60
 Val Lys Val Ala Leu Ala Ala Thr Ser Thr Pro Thr Ala Ser Ala Glu
 65 70 75 80
 Gln Ala Ser Pro Glu Ser Thr Ser Arg Arg Ile Arg Ala Lys Asn Arg
 85 90 95
 Ser Ser Phe Ser Ser Ser Glu Glu Glu Ser Ser Ala His Ile Pro Val
 100 105 110
 Asp Thr Ser Glu Pro Ala Pro Val Ser Ile Ala Asp Pro Glu Pro Glu
 115 120 125
 Leu Glu Val Val Asp Glu Val Cys Asp Glu Ser Pro Glu Val His Pro
 130 135 140
 Val Ala Glu Val Leu Pro Glu Gln Pro Val Leu Pro Glu Thr Pro Pro
 145 150 155 160
 Gln Glu Lys Glu Leu Glu Pro Lys Pro Val Lys Pro Ala Glu Pro Lys
 165 170 175
 Ser Val Val Met Ile Lys Ser Lys Phe Gly Pro Thr Gly Lys His Ile
 180 185 190
 Asn His Leu Leu Ala Lys Thr Phe Lys Ala Pro Ala Lys Glu Glu Lys
 195 200 205
 Val Val Ala Gly Ser Lys Ser Thr Lys Pro Val Ala Ser Asp Lys Thr
 210 215 220
 Gly Lys Pro Gly Thr Ser Glu Gly Gly Glu Gln Asn Asn Arg Glu Lys
 225 230 235 240
 Gln Phe Asn Pro Ala Asn Arg Ser Pro Ala Ser Gly Pro Lys Arg Asp
 245 250 255
 Ala Gly Lys Lys Asn Leu Thr Asp Phe Arg Asp Arg Ser Lys Lys Ser
 260 265 270
 Asp Glu Ser Leu Lys Ala Phe Thr Gly Arg Asp Arg Tyr Gly Leu Asn
 275 280 285
 Glu Gly Gly Glu Glu Asp Arg Trp Arg Lys Lys Arg Val Tyr Lys Pro
 290 295 300
 Lys Lys His Tyr Asp Glu Ala Ser Ile Gln Arg Pro Thr His Ile Lys
 305 310 315 320
 Ile Ser Leu Pro Ile Thr Val Lys Asp Leu Ala Thr Glu Met Lys Leu

325 330 335
 Lys Ala Ser Glu Val Ile Gln Lys Leu Phe Ile His Gly Met Thr Tyr
 340 345 350
 Val Val Asn Asp Ile Leu Asp Ser Glu Thr Ala Val Gln Phe Ile Gly
 355 360 365
 Leu Glu Phe Gly Cys Thr Ile Asp Ile Asp Tyr Ser Glu Gln Asp Lys
 370 375 380
 Leu Cys Leu Ser Asn Asp Thr Val Arg Asp Glu Ile Gln Ser Thr Asp
 385 390 400
 Pro Ser Lys Leu Val Ile Arg Ser Pro Ile Val Ala Phe Met Gly His
 405 410 415
 Val Asp His Gly Lys Thr Thr Leu Ile Asp Ser Leu Arg Lys Ser Asn
 420 425 430
 Val Ala Ala Thr Glu Ala Gly Ala Ile Thr Gln His Met Gly Ala Phe
 435 440 445
 Cys Cys Ser Thr Pro Val Gly Asp Ile Thr Ile Leu Asp Thr Pro Gly
 450 455 460
 His Glu Ala Phe Ser Ala Met Arg Ala Arg Gly Ala Glu Val Cys Asp
 465 470 475
 Ile Val Val Leu Val Val Ala Gly Asp Glu Gly Ile Lys Xaa Gln Thr
 485 490 495
 Leu Glu Ala Ile Glu His Ala Lys Ala Ala Asp Ile Ala Ile Val Val
 500 505 510
 Ala Ile Asn Lys Cys Asp Lys Pro Asn Phe Asn Ser Glu Thr Ile Tyr
 515 520 525
 Arg Gln Leu Ser Glu Ile Asn Leu Leu Pro Glu Ala Trp Gly Gly Ser
 530 535 540
 Thr Val Thr Val Asn Thr Ser Ala Lys Thr Gly Glu Gly Leu Ser Glu
 545 550 555
 Leu Leu Glu Met Leu Ala Leu Gln Ala Glu Val Leu Glu Leu Lys Ala
 565 570 575
 Asp Pro Ser Ala Arg Ala Arg Gly Leu Val Ile Glu Ser Glu Leu His
 580 585 590
 Lys Gly Leu Gly Pro Val Ala Thr Val Leu Ile Gln Asn Gly Ser Leu
 595 600 605
 Lys Leu Gly Glu Ala Leu Val Phe Asn Asp Cys Tyr Gly Lys Val Lys
 610 615 620
 Thr Met His Asn Glu His Asn Glu Leu Met Lys Glu Ala Gly Pro Ser
 625 630 635
 Ile Pro Val Leu Ile Thr Gly Leu Ser Asp Ile Pro Lys Ala Gly Asp
 645 650 655
 Pro Phe Phe Val Val Lys Asn Glu Lys Thr Ala Arg Asp Ile Ile Glu
 660 665 670
 Ala Arg Ser Ala Gly Gln Gln Arg Phe Ala Leu Gln Gln Lys Lys Arg
 675 680 685
 Pro Asn Phe Asp Ser Met Leu Gln Asn Lys Lys Thr Leu Lys Leu Met
 690 695 700
 Ile Lys Ala Asp Val Gln Gly Ser Ile Glu Ala Leu Val Ser Ser Ile
 705 710 715
 Ser Lys Ile Lys Ser Glu Lys Val Asp Val Glu Ile Leu Thr Asn Ser
 725 730 735
 Val Gly Glu Ile Ser Glu Ser Asp Ile Arg Leu Leu Pro Pro Leu Lys
 740 745 750
 Gln Phe Ser Ser Val Ser Ile Gln Glu
 755 760

<210>336

<211>170

<212>PRT

<213>Chlamydia pneumoniae

<400>336

Asn Phe Asn Lys Gln Cys Arg Arg Asn Phe Arg Ile Arg His Ser Phe
 1 5 10 15
 Thr Ala Ala Ser Lys Ala Val Leu Ile Gly Phe His Thr Gly Ile Glu
 20 25 30

Ser His Ala Glu Pro Leu Ile Lys Ser Leu Gly Val Arg Val Glu Leu
 35 40 45
 Phe Thr Val Ile Tyr His Ala Ile Asp Ala Ile Lys Glu Ile Met Thr
 50 55 60
 Ser Leu Leu Asp Pro Ile Ala Glu Glu Lys Asp Glu Gly Ser Ala Glu
 65 70 75 80
 Ile Lys Glu Ile Phe Arg Ser Ser Gln Val Gly Ser Ile Tyr Gly Cys
 85 90 95
 Ile Val Thr Glu Gly Ile Met Thr Arg Asn His Lys Val Arg Val Leu
 100 105 110
 Arg Asn Lys Glu Ile Leu Trp Lys Gly Thr Leu Ser Ser Leu Lys Arg
 115 120 125
 Val Lys Glu Asp Val Lys Glu Val Arg Lys Gly Leu Glu Cys Gly Ile
 130 135 140
 Leu Leu Glu Gly Tyr Gln Gln Ala Gln Ile Gly Asp Val Leu Gln Cys
 145 150 155 160
 Tyr Glu Val Ile Tyr His Pro Gln Lys Leu
 165 170

<210>337

<211>141

<212>PRT

<213>Chlamydia pneumoniae

<400>337

Val Met Ser Tyr Asn Val Met Lys Leu Ser Ile Ile His Lys Asn Tyr
 1 5 10 15
 Asn Leu Lys Tyr Cys Met Thr Glu Asn Arg Arg Ile Lys Arg Val Asn
 20 25 30
 Ala Leu Leu Gln Glu Ala Ile Ala Lys Val Ile Leu Lys Asp Val Lys
 35 40 45
 His Pro Lys Ile Ser Asn Leu Trp Ile Thr Val Thr Arg Val Ser Leu
 50 55 60
 Ser Lys Asp Leu His Ser Ala Arg Val Tyr Val Ser Val Met Pro His
 65 70 75 80
 Glu Asn Thr Lys Glu Glu Ala Leu Glu Ala Leu Lys Val Ser Ala Gly
 85 90 95
 Phe Ile Ala His Arg Ala Ser Lys Asn Val Val Leu Lys Tyr Phe Pro
 100 105 110
 Glu Leu His Phe Tyr Leu Asp Asp Ile Phe Ser Pro Gln Asp Tyr Ile
 115 120 125
 Glu Asn Leu Leu Trp Gln Ile Gln Glu Lys Glu Lys Ser
 130 135 140

<210>338

<211>243

<212>PRT

<213>Chlamydia pneumoniae

<400>338

Leu Asn Thr Ile Lys Asp Met Thr Met Asp Leu Ala Val Glu Leu Lys
 1 5 10 15
 Glu Gly Ile Leu Leu Val Asp Lys Pro Gln Gly Arg Thr Ser Phe Ser
 20 25 30
 Leu Ile Arg Ala Leu Thr Lys Leu Ile Gly Val Lys Lys Ile Gly His
 35 40 45
 Ala Gly Thr Leu Asp Pro Phe Ala Thr Gly Val Met Val Met Leu Ile
 50 55 60
 Gly Arg Lys Phe Thr Arg Leu Ser Asp Ile Leu Leu Phe Glu Asp Lys
 65 70 75 80
 Glu Tyr Glu Ala Ile Ala His Leu Gly Thr Thr Thr Asp Ser Tyr Asp
 85 90 95
 Cys Asp Gly Lys Val Val Gly Arg Ser Lys Lys Ile Pro Ser Leu Glu
 100 105 110
 Glu Val Leu Ser Ala Ala Glu Tyr Phe Gln Gly Glu Ile Gln Gln Leu
 115 120 125
 Pro Pro Met Phe Ser Ala Lys Lys Val Gln Gly Lys Lys Leu Tyr Glu
 130 135 140

Tyr Ala Arg Lys Gly Leu Ser Ile Glu Arg His His Ser Thr Val Gln
 145 150 155 160
 Val His Leu Gln Ile Thr Lys Tyr Glu Tyr Pro Leu Leu His Phe Val
 165 170 175
 Val Ser Cys Ser Lys Gly Thr Tyr Ile Arg Ser Ile Ala His Glu Leu
 180 185 190
 Gly Thr Met Leu Gly Cys Gly Ala Tyr Leu Glu Gln Leu Arg Arg Leu
 195 200 205
 Arg Ser Gly Arg Phe Ser Ile Asp Glu Cys Ile Asp Gly Asn Leu Leu
 210 215 220
 Asp His Pro Asp Phe Asp Ile Ser Pro Tyr Leu Arg Asp Ala His Gly
 225 230 235 240
 Asn Ser Leu

<210>339

<211>308

<212>PRT

<213>Chlamydia pneumoniae

<400>339

Met Pro Met Glu Ile Ala Tyr Ser Leu Thr Ser Ser Phe Ser Val Asp
 1 5 10 15
 Ser Val Thr Val Gly Phe Phe Asp Gly Cys His Leu Gly His Ser Asn
 20 25 30
 Leu Leu Ser Ile Leu Thr Ser Tyr Ser Gly Ser Ser Gly Val Ile Thr
 35 40 45
 Phe Asp Ser His Pro Gln Thr Val Leu Ser Leu Asn His Thr Lys Leu
 50 55 60
 Ile Asn Thr Lys Glu Glu Arg Leu Gln Leu Leu Gln Thr Phe Pro Ile
 65 70 75 80
 Asp Trp Leu Gly Val Leu Thr Phe Asp Leu Asn Phe Ala Asn Gln Ser
 85 90 95
 Ala Glu Glu Phe Leu Thr Leu Leu His Arg Asn Leu Lys Cys Lys Arg
 100 105 110
 Leu Ile Leu Gly Tyr Asp Ser Cys Ile Gly Lys Glu Gln Gln Ser Asn
 115 120 125
 Thr Glu Ala Leu Asp Thr Ile Gly Lys Pro Leu Gly Ile Glu Val Ile
 130 135 140
 Lys Ile Pro Pro Tyr Arg Met Asp Asn Ile Val Val Ser Ser Lys Ala
 145 150 155 160
 Ile Arg Gln Phe Leu Ser Ala Gly Asn Leu Glu Cys Ala His Arg Phe
 165 170 175
 Leu Gly His Pro Tyr Ala Ile Ser Gly Lys Ile Thr Glu Gly Ser Gly
 180 185 190
 Ile Gly Gly Ser Leu Gly Phe Ala Thr Ile Asn Leu Pro Arg Glu Glu
 195 200 205
 Ser Leu Ile Pro Leu Gly Val Tyr Ala Cys Glu Ile Arg Tyr Asp Ser
 210 215 220
 Thr Thr Cys Gln Gly Val Met Asn Leu Gly Thr Ala Pro Thr Phe Gly
 225 230 235 240
 Arg Glu Ser Leu Tyr Ala Glu Ala His Ile Phe Ser Phe Ala Glu Asn
 245 250 255
 Leu Tyr Gly Lys Glu Val Ser Ile Ile Pro Arg Lys Phe Leu Arg Glu
 260 265 270
 Glu Lys Lys Phe Gln Ser Lys Glu Thr Leu Ile Arg Ala Ile Glu Lys
 275 280 285
 Asp Ile Leu Asp Ala Gln Asp Trp Phe Ala Lys Gly Ser Phe Asn Tyr
 290 295 300
 Glu Gly Thr Ala
 305

<210>340

<211>198

<212>PRT

<213>Chlamydia pneumoniae

<400>340

Tyr Asn Tyr Cys Ser Leu Arg Lys Gly Leu Pro Leu Arg Thr Leu Glu
 1 5 10 15
 Leu Thr Pro Glu Gln Ile Val Ala Leu Lys Pro Tyr Pro Phe Leu Thr
 20 25 30
 Met Lys Pro Met Phe Tyr Ile Ala Asn Val Asp Glu Ser Ser Leu Pro
 35 40 45
 Asp Met Asp Asn Asp Tyr Val Ala Ala Val Arg Glu Val Ala Ala Lys
 50 55 60
 Glu Asn Ser Lys Val Val Pro Ile Cys Val Arg Ile Glu Glu Glu Ile
 65 70 75 80
 Val Ser Leu Pro Ile Glu Glu Arg Leu Glu Phe Leu Met Ser Leu Gly
 85 90 95
 Leu Glu Lys Ser Gly Leu His Arg Leu Val Arg Ala Ala Tyr Asp Thr
 100 105 110
 Leu Gly Leu Ile Ser Tyr Phe Thr Thr Gly Pro Gln Glu Ser Arg Ala
 115 120 125
 Trp Thr Val Val Arg Gly Ser Ser Ala Trp Glu Ala Ala Gly Glu Ile
 130 135 140
 His Thr Asp Ile Gln Lys Gly Phe Ile Arg Ala Glu Val Ile Thr Phe
 145 150 155 160
 Glu Asp Met Ile Glu Cys Gln Gly Arg Ala Ala Ala Arg Glu Leu Gly
 165 170 175
 Lys Leu His Ile Glu Gly Arg Asp Tyr Ile Val Gln Asp Gly Asp Thr
 180 185 190
 Met Leu Phe Leu His Asn
 195

<210>341

<211>180

<212>PRT

<213>Chlamydia pneumoniae

<400>341

Met Ser His Thr Glu Cys Gly Ile Val Gly Leu Pro Asn Val Gly Lys
 1 5 10 15
 Ser Gly Leu Phe Asn Ala Leu Thr Gly Ala Gln Val Ala Ser Cys Asn
 20 25 30
 Tyr Pro Phe Cys Thr Ile Asp Pro Asn Val Gly Ile Val Pro Val Ile
 35 40 45
 Asp Glu Arg Leu Glu Ala Leu Lys Ile Ser Asn Ser Gln Lys Ile
 50 55 60
 Ile Tyr Ala Asp Met Lys Phe Val Asp Ile Ala Gly Leu Val Lys Gly
 65 70 75 80
 Ala Ser Asp Gly Ala Gly Leu Gly Asn Arg Phe Leu Ser His Ile Arg
 85 90 95
 Glu Thr His Ala Ile Ala His Val Val Arg Cys Phe Asp Asp Pro Asp
 100 105 110
 Val Thr His Val Ser Gly Lys Val Asn Pro Val Glu Asp Ile Glu Val
 115 120 125
 Ile Asn Leu Glu Leu Ile Phe Ser Asp Phe Ser Ser Ala Lys Asn Ile
 130 135 140
 His Ser Lys Leu Glu Lys Leu Ala Lys Gly Lys Arg Glu Val Gly Ala
 145 150 155 160
 Leu Leu Pro Leu Phe Asp Thr Ile Ile Ala His Leu Glu Lys Gly Cys
 165 170 175
 Arg Tyr Val Leu
 180

<210>342

<211>360

<212>PRT

<213>Chlamydia pneumoniae

<400>342

Met Gly Glu Lys Thr Glu Lys Ala Thr Pro Lys Arg Leu Arg Asp Ala
 1 5 10 15
 Arg Lys Lys Gly Gln Val Ala Lys Ser Gln Asp Phe Pro Ser Ala Val
 20 25 30

Thr Phe Ile Val Ser Met Phe Thr Ala Phe Ser Leu Ser Thr Phe Phe
 35 40 45
 Phe Lys His Leu Gly Gly Phe Leu Val Ser Met Leu Ser Gln Ala Pro
 50 55 60
 Thr Arg His Asp Pro Val Ile Thr Leu Phe Tyr Leu Lys Asn Cys Leu
 65 70 75 80
 Met Leu Ile Leu Thr Ala Ser Leu Pro Leu Leu Gly Ala Val Ala Val
 85 90 95
 Val Gly Val Ile Val Gly Phe Leu Ile Val Gly Pro Thr Phe Ser Thr
 100 105 110
 Glu Val Phe Lys Pro Asp Ile Lys Lys Phe Asn Pro Ile Glu Asn Ile
 115 120 125
 Lys Gln Lys Phe Lys Ile Lys Thr Leu Ile Glu Leu Ile Lys Ser Ile
 130 135 140
 Leu Lys Ile Phe Gly Ala Ala Leu Ile Leu Tyr Ile Thr Leu Lys Ser
 145 150 155 160
 Lys Val Ser Leu Ile Ile Glu Thr Ala Gly Val Ser Pro Ile Ile Thr
 165 170 175
 Ala Gln Ile Phe Lys Glu Ile Phe Tyr Lys Ala Val Thr Ser Ile Gly
 180 185 190
 Ile Phe Phe Leu Ile Val Ala Ile Leu Asp Leu Val Tyr Gln Arg His
 195 200 205
 Asn Phe Ala Lys Glu Leu Lys Met Glu Lys Phe Glu Val Lys Gln Glu
 210 215 220
 Phe Lys Asp Thr Glu Gly Asn Pro Glu Ile Lys Gly Arg Arg Arg Gln
 225 230 235 240
 Ile Ala Gln Glu Ile Ala Tyr Glu Asp Ser Ser Gln Val Lys His
 245 250 255
 Ala Ser Thr Val Val Ser Asn Pro Lys Asp Ile Ala Val Ala Ile Gly
 260 265 270
 Tyr Met Pro Glu Lys Tyr Lys Ala Pro Trp Ile Ile Ala Met Gly Ile
 275 280 285
 Asn Leu Arg Ala Lys Arg Ile Leu Asp Glu Ala Glu Lys Tyr Gly Ile
 290 295 300
 Pro Ile Met Arg Asn Val Pro Leu Ala His Gln Leu Leu Asp Glu Gly
 305 310 315 320
 Lys Glu Leu Lys Phe Ile Pro Glu Ser Thr Tyr Glu Ala Ile Gly Glu
 325 330 335
 Ile Leu Leu Tyr Ile Thr Ser Leu Asn Ala Gln Asn Pro Asn Asn Lys
 340 345 350
 Asn Thr Asn Gln Pro Asp His Leu
 355 360

<210>343

<211>606

<212>PRT

<213>Chlamydia pneumoniae

<400>343

Ser Val Cys Gly Ser Cys His Ser Gly Phe Gly Asp Phe Val Val Gly
 1 5 10 15
 Gly Asn Tyr Val Val Gly Phe Ile Ile Phe Leu Ile Ile Thr Ile Ile
 20 25 30
 Gln Phe Ile Val Val Thr Lys Gly Ala Glu Arg Val Ala Glu Val Ala
 35 40 45
 Ala Arg Phe Arg Leu Asp Ala Met Pro Gly Lys Gln Met Ala Ile Asp
 50 55 60
 Ala Asp Leu Arg Ala Gly Met Ile Asp Ala Thr Gln Ala Arg Asp Lys
 65 70 75 80
 Arg Ala Gln Ile Gln Lys Glu Ser Glu Leu Tyr Gly Ala Met Asp Gly
 85 90 95
 Ala Met Lys Phe Ile Lys Gly Asp Val Ile Ala Gly Ile Val Ile Ser
 100 105 110
 Leu Ile Asn Ile Val Gly Gly Leu Thr Ile Gly Val Ala Met His Gly
 115 120 125
 Met Asp Leu Ala Gln Ala Ala His Val Tyr Thr Leu Leu Ser Ile Gly

130	135	140
Asp Gly Leu Val Ser Gln Ile Pro Ser Leu Leu Ile Ala Leu Thr Ala		
145	150	155
Gly Ile Val Thr Thr Arg Val Ser Ser Asp Lys Asn Thr Asn Leu Gly		
	165	170
Lys Glu Ile Ser Thr Gln Leu Val Lys Glu Pro Arg Ala Leu Leu Leu		175
	180	185
Ala Gly Ala Ala Thr Leu Gly Val Gly Phe Phe Lys Gly Phe Pro Leu		190
	195	200
Trp Ser Phe Ser Ile Leu Ala Leu Ile Phe Val Ala Leu Gly Ile Leu		205
	210	215
Leu Leu Thr Lys Lys Ser Ala Ala Gly Lys Lys Gly Gly Gly Ser Gly		220
225	230	235
Ala Ser Thr Thr Val Gly Ala Ala Gly Asp Gly Ala Ala Thr Val Gly		240
	245	250
Asp Asn Pro Asp Asp Tyr Ser Leu Thr Leu Pro Val Ile Leu Glu Leu		255
	260	265
Gly Lys Asp Leu Ser Lys Leu Ile Gln His Lys Thr Lys Ser Gly Gln		270
	275	280
Ser Phe Val Asp Asp Met Ile Pro Lys Met Arg Gln Ala Leu Tyr Gln		285
	290	295
Asp Ile Gly Ile Arg Tyr Pro Gly Ile His Val Arg Thr Asp Ser Pro		300
305	310	315
Ser Leu Glu Gly Tyr Asp Tyr Met Ile Leu Leu Asn Glu Val Pro Tyr		320
	325	330
Val Arg Gly Lys Ile Pro Pro His His Val Leu Thr Asn Glu Val Glu		335
	340	345
Asp Asn Leu Ser Arg Tyr Asn Leu Pro Phe Ile Thr Tyr Lys Asn Ala		350
	355	360
Ala Gly Leu Pro Ser Ala Trp Val Ser Glu Asp Ala Lys Ala Ile Leu		365
	370	375
Glu Lys Ala Ala Ile Lys Tyr Trp Thr Pro Leu Glu Val Ile Ile Leu		380
385	390	395
His Leu Ser Tyr Phe Phe His Lys Ser Ser Gln Glu Phe Leu Gly Ile		400
	405	410
Gln Glu Val Arg Ser Met Ile Glu Phe Met Glu Arg Ser Phe Pro Asp		415
	420	425
Leu Val Lys Glu Val Thr Arg Leu Ile Pro Leu Gln Lys Leu Thr Glu		430
	435	440
Ile Phe Lys Arg Leu Val Gln Glu Gln Ile Ser Ile Lys Asp Leu Arg		445
	450	455
Thr Ile Leu Glu Ser Leu Ser Glu Trp Ala Gln Thr Glu Lys Asp Thr		460
465	470	475
Val Leu Leu Thr Glu Tyr Val Arg Ser Ser Leu Lys Leu Tyr Ile Ser		480
	485	490
Phe Lys Phe Ser Gln Gly Gln Ser Ala Ile Ser Val Tyr Leu Leu Asp		495
	500	505
Pro Glu Ile Glu Glu Met Ile Arg Gly Ala Ile Lys Gln Thr Ser Ala		510
	515	520
Gly Ser Tyr Leu Ala Leu Asp Pro Asp Ser Val Asn Leu Ile Leu Lys		525
	530	535
Ser Met Arg Asn Thr Ile Thr Pro Thr Pro Ala Gly Gly Gln Pro Pro		540
545	550	555
Val Leu Leu Thr Ala Ile Asp Val Arg Arg Tyr Val Arg Lys Leu Ile		560
	565	570
Glu Thr Glu Phe Pro Asp Ile Ala Val Ile Ser Tyr Gln Glu Ile Leu		575
	580	585
Pro Glu Ile Arg Ile Gln Pro Leu Gly Arg Ile Gln Ile Phe		590
	595	600
		605

<210>344

<211>215

<212>PRT

<213>Chlamydia pneumoniae

<400>344

Tyr Val Val Ala His Arg Arg His Met Ala Ala Ser Gly Gly Thr Gly
 1 5 10 15
 Gly Leu Gly Gly Thr Gln Gly Val Asn Leu Ala Ala Val Glu Ala Ala
 20 25 30
 Ala Ala Lys Ala Asp Ala Ala Glu Val Val Ala Ser Gln Glu Gly Ser
 35 40 45
 Glu Met Asn Met Ile Gln Gln Ser Gln Asp Leu Thr Asn Pro Ala Ala
 50 55 60
 Ala Thr Arg Thr Lys Lys Lys Glu Glu Lys Phe Gln Thr Leu Glu Ser
 65 70 75 80
 Arg Lys Lys Gly Glu Ala Gly Lys Ala Glu Lys Lys Ser Glu Ser Thr
 85 90 95
 Glu Glu Lys Pro Asp Thr Asp Leu Ala Asp Lys Tyr Ala Ser Gly Asn
 100 105 110
 Ser Glu Ile Ser Gly Gln Glu Leu Arg Gly Leu Arg Asp Ala Ile Gly
 115 120 125
 Asp Asp Ala Ser Pro Glu Asp Ile Leu Ala Leu Val Gln Glu Lys Ile
 130 135 140
 Lys Asp Pro Ala Leu Gln Ser Thr Ala Leu Asp Tyr Leu Val Gln Thr
 145 150 155 160
 Thr Pro Pro Ser Gln Gly Lys Leu Lys Glu Ala Leu Ile Gln Ala Arg
 165 170 175
 Asn Thr His Thr Glu Gln Phe Gly Arg Thr Ala Ile Gly Ala Lys Asn
 180 185 190
 Ile Leu Phe Ala Ser Gln Glu Tyr Ala Asp Gln Leu Asn Val Ser Pro
 195 200 205
 Ser Gly Phe Ala Leu Cys Thr
 210 215
 <210>345
 <211>240
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>345
 Ile Lys Arg Ser Ala Tyr Pro Ser Lys Glu Tyr Ser Tyr Gly Ala Ile
 1 5 10 15
 Arg Thr Asn Cys Tyr Trp Cys Glu Lys His Leu Ile Cys Leu Ser Arg
 20 25 30
 Ile Cys Arg Pro Thr Glu Cys Phe Ser Phe Arg Xaa Arg Ser Leu Tyr
 35 40 45
 Leu Glu Val Thr Gly Asp Thr His Thr Cys Asp Gln Leu Leu Ser Met
 50 55 60
 Leu Gln Asp Arg Tyr Thr Tyr Gln Asp Met Ala Ile Val Ser Ser Phe
 65 70 75 80
 Leu Met Lys Gly Met Ala Thr Glu Leu Lys Arg Gln Gly Pro Tyr Val
 85 90 95
 Pro Ser Ala Gln Leu Gln Val Leu Met Thr Glu Thr Arg Asn Leu Gln
 100 105 110
 Ala Val Leu Thr Ser Tyr Asp Tyr Phe Glu Ser Arg Val Pro Ile Leu
 115 120 125
 Leu Asp Ser Leu Lys Ala Glu Gly Ile Gln Thr Pro Ser Asp Leu Asn
 130 135 140
 Phe Val Lys Ile Ala Glu Ser Tyr His Lys Ile Ile Asn Asp Lys Phe
 145 150 155 160
 Pro Thr Ala Ser Lys Val Glu Arg Glu Val Arg Asn Leu Ile Gly Asp
 165 170 175
 Asp Val Asp Ser Val Thr Gly Val Leu Asn Leu Phe Phe Ser Ala Leu
 180 185 190
 Arg Gln Thr Ser Ser Arg Leu Phe Ser Ser Ala Asp Lys Arg Gln Gln
 195 200 205
 Leu Gly Ala Met Ile Ala Asn Ala Leu Asp Ala Val Asn Ile Asn Asn
 210 215 220
 Glu Asp Tyr Pro Lys Ala Ser Asp Phe Pro Lys Pro Tyr Pro Trp Ser
 225 230 235 240
 <210>346

<211>151

<212>PRT

<213>Chlamydia pneumoniae

<400>346

Lys Arg Ile Ala Met Gln Asn Gln Tyr Glu Gln Leu Leu Glu Ser Leu
 1 5 10 15
 Ala Pro Leu Leu Asn Thr Thr Leu Ala Pro Asp Lys Asn Asn Ser Cys
 20 25 30
 Leu Ile Arg Phe Ser Asp Thr His Val Pro Val Gln Ile Glu Asp
 35 40 45
 Gly Asn Ser Gly Asp Leu Ala Val Ser Thr Leu Leu Gly Thr Leu Pro
 50 55 60
 Glu Asn Val Phe Arg Glu Arg Ile Phe Lys Ala Ala Leu Ser Val Asn
 65 70 75 80
 Gly Ser Phe Gln Ser Ser Ile Lys Gly Ile Leu Gly Tyr Gly Glu Val
 85 90 95
 Thr Gln Gln Leu Tyr Leu Ser Asp Ile Leu Ser Met Asn Tyr Leu Asn
 100 105 110
 Gly Glu Lys Leu Phe Glu Tyr Leu Lys Leu Phe Ser Leu His Ala Lys
 115 120 125
 Ile Trp Met Glu Ser Leu Arg Thr Gly Asn Leu Pro Asp Leu His Val
 130 135 140
 Leu Gly Ile Tyr Tyr Val Ala
 145 150

<210>347

<211>526

<212>PRT

<213>Chlamydia pneumoniae

<400>347

Val Asn Val Leu Lys Tyr Thr Lys His Ser Pro Ser Ala His Ala Trp
 1 5 10 15
 Lys Leu Ile Gly Thr Ser Pro Lys His Gly Ile Tyr Leu Pro Leu Phe
 20 25 30
 Ser Ile His Thr Lys Asn Ser Cys Gly Ile Gly Glu Phe Leu Asp Leu
 35 40 45
 Ile Pro Leu Ile Ser Trp Cys Gln Lys Gln Gly Phe Ser Val Ile Gln
 50 55 60
 Leu Leu Pro Leu Asn Asp Thr Gly Glu Asp Thr Ser Pro Tyr Asn Ser
 65 70 75 80
 Ile Ser Ser Val Ala Leu Asn Pro Leu Phe Leu Ser Leu Ser Ser Leu
 85 90 95
 Pro Asn Ile Asp Thr Ile Pro Glu Val Ala Lys Lys Leu Gln Asp Met
 100 105 110
 His Glu Leu Cys Ser Thr Pro Ser Val Ser Tyr Thr Gln Val Lys Glu
 115 120 125
 Lys Lys Trp Ala Phe Leu Arg Glu Tyr Tyr Gln Lys Cys Cys Lys Ser
 130 135 140
 Ser Leu Glu Gly Asn Ser Asn Phe Ser Glu Phe Leu Glu Ser Glu Arg
 145 150 155 160
 Tyr Trp Leu Tyr Pro Tyr Gly Thr Phe Arg Ala Ile Lys His His Met
 165 170 175
 His Gly Glu Pro Ile Asn Asn Trp Pro Lys Ser Leu Thr Asp Gln Glu
 180 185 190
 Asn Phe Pro Asp Leu Thr Lys Lys Phe His Asp Glu Val Leu Phe Phe
 195 200 205
 Ser Tyr Leu Gln Phe Leu Cys Tyr Gln Gln Leu Cys Glu Val Lys Ala
 210 215 220
 Tyr Ala Asp Gln His His Val Leu Leu Lys Gly Asp Leu Pro Ile Leu
 225 230 235 240
 Ile Ser Lys Asp Ser Cys Asp Val Trp Tyr Phe Arg Asp Tyr Phe Ser
 245 250 255
 Ser Ser Arg Ser Val Gly Ala Pro Pro Asp Leu Tyr Asn Ser Glu Gly
 260 265 270
 Gln Asn Trp His Leu Pro Ile Tyr Asn Phe Ser Gln Leu Ala Lys Asp

275 280 285
 Asp Tyr Ile Trp Trp Lys Glu Arg Leu Arg Tyr Ala Gln Asn Phe Tyr
 290 295 300
 Ser Val Tyr Arg Leu Asp His Ile Ile Gly Phe Phe Arg Leu Trp Ile
 305 310 315 320
 Trp Asp Ser Ser Gly Arg Gly Arg Phe Ile Pro Asp Asn Pro Lys Asp
 325 330 335
 Tyr Ile Lys Gln Gly Thr Glu Ile Leu Ser Thr Met Leu Gly Ala Ser
 340 345 350
 Ser Met Leu Pro Ile Gly Glu Asp Leu Gly Ile Ile Pro Gln Asp Val
 355 360 365
 Lys Thr Thr Leu Thr His Leu Gly Ile Cys Gly Thr Arg Ile Pro Arg
 370 375 380
 Trp Glu Arg Asn Trp Glu Ser Asp Ser Ala Phe Ile Pro Leu Lys Asp
 385 390 395 400
 Tyr Asn Pro Leu Ser Val Thr Thr Leu Ser Thr His Asp Ser Asp Thr
 405 410 415
 Phe Ala Gln Trp Trp Leu Asn Ser Pro Lys Glu Ala Lys Gln Phe Ala
 420 425 430
 Lys Phe Leu His Leu Pro Phe Gln Lys Thr Leu Thr Thr Glu Thr Gln
 435 440 445
 Ile Asp Ile Leu Lys Leu Ser His Glu Ser Ala Ser Ile Phe His Ile
 450 455 460
 Asn Leu Phe Asn Asp Tyr Leu Ala Leu Cys Pro Asp Leu Val Ser Lys
 465 470 475 480
 Asn Leu Gln Arg Glu Arg Ile Asn Thr Pro Gly Thr Ile Ser Lys Lys
 485 490 495
 Asn Trp Ser Tyr Arg Val Arg Pro Ser Leu Glu Glu Leu Ala Ile His
 500 505 510
 Lys Lys Phe Asn Gly Tyr Ile Glu Lys Ile Leu Thr Gly Leu
 515 520 525

<210>348

<211>89

<212>PRT

<213>Chlamydia pneumoniae

<400>348

Met Ser Arg Lys Cys Pro Leu Thr Gly Lys Arg Pro Arg Arg Gly Tyr
 1 5 10 15
 Ser Tyr Thr Leu Arg Gly Ile Ala Lys Lys Lys Lys Gly Ile Gly Leu
 20 25 30
 Lys Val Thr Gly Lys Thr Lys Arg Arg Phe Phe Pro Asn Met Leu Thr
 35 40 45
 Lys Arg Leu Trp Ser Thr Glu Glu Asn Arg Phe Leu Lys Leu Lys Ile
 50 55 60
 Ser Ala Ser Ala Leu Arg His Ile Asp Lys Leu Gly Leu Glu Lys Val
 65 70 75 80
 Leu Glu Arg Ala Lys Ser Lys Asn Phe
 85

<210>349

<211>584

<212>PRT

<213>Chlamydia pneumoniae

<400>349

Met Ser Phe Leu Arg Arg His Ile Ser Leu Phe Arg Ser Gln Lys Gln
 1 5 10 15
 Leu Ile Asp Val Phe Ala Pro Val Ser Pro Asn Leu Glu Leu Ala Glu
 20 25 30
 Ile His Arg Arg Val Ile Glu Asp Gln Gly Pro Ala Leu Leu Phe His
 35 40 45
 Asn Val Ile Gly Ser Ser Phe Pro Val Leu Thr Asn Leu Phe Gly Thr
 50 55 60
 Lys His Arg Val Asp Gln Leu Phe Ser Gln Ala Pro Asp Asn Leu Ile
 65 70 75 80
 Ala Arg Val Ala His Leu Ile Ser Ser Thr Pro Lys Leu Ser Ser Leu

				85					90					95	
Trp	Lys	Ser	Arg	Asp	Leu	Leu	Lys	Arg	Ile	Ser	Ser	Leu	Gly	Leu	Lys
			100					105					110		
Lys	Ala	Arg	Phe	Arg	Arg	Phe	Pro	Phe	Val	Ser	Met	Ser	Ser	Val	Asn
		115					120					125			
Leu	Asp	His	Leu	Pro	Leu	Leu	Thr	Ser	Trp	Pro	Glu	Asp	Gly	Gly	Ala
	130					135					140				
Phe	Leu	Thr	Leu	Pro	Leu	Val	Tyr	Thr	Glu	Ser	Pro	Thr	Leu	Thr	Thr
145					150					155				160	
Pro	Asn	Leu	Gly	Met	Tyr	Arg	Val	Gln	Arg	Phe	Asn	Gln	Asn	Thr	Met
			165					170					175		
Gly	Leu	His	Phe	Gln	Ile	Gln	Lys	Gly	Gly	Met	His	Leu	Tyr	Glu	
		180						185				190			
Ala	Glu	Gln	Lys	Lys	Gln	Asn	Leu	Pro	Val	Ser	Val	Phe	Leu	Ser	Gly
		195					200					205			
Asn	Pro	Phe	Leu	Thr	Leu	Ser	Ala	Ile	Ala	Pro	Leu	Pro	Glu	Asn	Val
	210					215					220				
Ser	Glu	Leu	Leu	Phe	Ala	Thr	Phe	Leu	Gln	Gly	Ala	Lys	Leu	Leu	Tyr
225					230					235				240	
Lys	Lys	Thr	Asn	Asp	His	Pro	His	Pro	Leu	Leu	Tyr	Asp	Ala	Glu	Phe
			245						250					255	
Ile	Leu	Val	Gly	Glu	Ser	Pro	Ala	Gly	Lys	Arg	Arg	Pro	Glu	Gly	Pro
			260					265					270		
Phe	Gly	Asp	His	Phe	Gly	Tyr	Tyr	Ser	Leu	Gln	His	Asp	Phe	Pro	Glu
	275					280					285				
Phe	His	Cys	His	Lys	Ile	Tyr	His	Arg	Lys	Asp	Ala	Ile	Tyr	Pro	Ala
	290					295				300					
Thr	Val	Val	Gly	Lys	Pro	Tyr	Gln	Glu	Asp	Phe	Tyr	Ile	Gly	Asn	Lys
305					310					315				320	
Leu	Gln	Glu	Tyr	Leu	Ser	Pro	Leu	Phe	Pro	Leu	Val	Met	Pro	Gly	Val
			325					330						335	
Arg	Arg	Leu	Lys	Ser	Tyr	Gly	Glu	Ser	Gly	Phe	His	Ala	Leu	Thr	Ala
			340					345					350		
Ala	Val	Val	Lys	Glu	Arg	Tyr	Trp	Arg	Glu	Ser	Leu	Thr	Thr	Ala	Leu
	355						360					365			
Arg	Ile	Leu	Gly	Glu	Gly	Gln	Leu	Ser	Leu	Thr	Lys	Phe	Leu	Met	Val
	370					375					380				
Thr	Asp	Gln	Glu	Val	Pro	Leu	Asp	Arg	Phe	Ser	Val	Val	Leu	Glu	Thr
385					390					395				400	
Ile	Leu	Glu	Arg	Leu	Gln	Pro	Asp	Arg	Asp	Leu	Ile	Ile	Phe	Ser	Glu
			405					410						415	
Thr	Ala	Asn	Asp	Thr	Leu	Asp	Tyr	Thr	Gly	Pro	Ser	Leu	Asn	Lys	Gly
			420					425					430		
Ser	Lys	Gly	Ile	Phe	Met	Gly	Ile	Gly	Lys	Ala	Ile	Arg	Asp	Leu	Pro
	435					440					445				
His	Gly	Tyr	Gln	Gly	Gly	Lys	Ile	His	Gly	Val	Gln	Asp	Ile	Ala	Pro
	450					455				460					
Phe	Cys	Arg	Gly	Cys	Leu	Val	Leu	Glu	Thr	Ser	Leu	Glu	Asp	Arg	Cys
465					470					475				480	
Ile	Lys	Ser	Leu	Leu	His	His	Pro	Asp	Leu	Lys	Ser	Trp	Pro	Leu	Ile
			485					490						495	
Ile	Leu	Ala	Asp	Asn	Leu	Arg	Glu	Thr	Ile	Gln	Ser	Glu	Lys	Asp	Phe
			500					505					510		
Leu	Trp	Arg	Thr	Phe	Thr	Arg	Cys	Ala	Pro	Ala	Asn	Asp	Leu	His	Ala
	515						520					525			
Leu	His	Ser	His	Phe	Ala	Thr	His	Arg	Pro	Asn	Tyr	Asn	Phe	Pro	Phe
	530					535					540				
Val	Ile	Asp	Ala	Leu	Met	Lys	Pro	Ser	Tyr	Pro	Lys	Glu	Val	Glu	Val
545					550					555				560	
Asp	Pro	Ser	Thr	Lys	Gln	Lys	Val	Ser	Glu	Arg	Trp	His	Ala	Tyr	Phe
			565					570						575	
Pro	Asn	Lys	Glu	Thr	Phe	Tyr	Ile								
			580												

<210>350

<211>354

<212>PRT

<213>Chlamydia pneumoniae

<400>350

Lys Met Asn Lys Arg Gln Lys Asp Lys Leu Lys Ile Cys Val Ile Ile
 1 5 10 15
 Ser Thr Leu Ile Leu Val Gly Ile Phe Ala Arg Ala Pro Arg Gly Asp
 20 25 30
 Thr Phe Lys Thr Phe Leu Lys Ser Glu Glu Ala Ile Ile Tyr Ser Asn
 35 40 45
 Gln Cys Asn Glu Asp Met Arg Lys Ile Leu Cys Asp Ala Ile Glu His
 50 55 60
 Ala Asp Glu Glu Ile Phe Leu Arg Ile Tyr Asn Leu Ser Glu Pro Lys
 65 70 75 80
 Ile Gln Gln Ser Leu Thr Arg Gln Ala Gln Ala Lys Asn Lys Val Thr
 85 90 95
 Ile Tyr Tyr Gln Lys Phe Lys Ile Pro Gln Ile Leu Lys Gln Ala Ser
 100 105 110
 Asn Val Thr Leu Val Glu Gln Pro Pro Ala Gly Arg Lys Leu Met His
 115 120 125
 Gln Lys Ala Leu Ser Ile Asp Lys Lys Asp Ala Trp Leu Gly Ser Ala
 130 135 140
 Asn Tyr Thr Asn Leu Ser Leu Arg Leu Asp Asn Asn Leu Ile Leu Gly
 145 150 155 160
 Met His Ser Ser Glu Leu Cys Asp Leu Ile Ile Thr Asn Thr Ser Gly
 165 170 175
 Asp Phe Ser Ile Lys Asp Gln Thr Gly Lys Tyr Phe Val Leu Pro Gln
 180 185 190
 Asp Arg Lys Ile Ala Ile Gln Ala Val Leu Glu Lys Ile Gln Thr Ala
 195 200 205
 Gln Lys Thr Ile Gln Val Ala Met Phe Ala Leu Thr His Ser Glu Ile
 210 215 220
 Ile Gln Ala Leu His Gln Ala Lys Gln Arg Gly Ile His Val Asp Ile
 225 230 235 240
 Ile Ile Asp Arg Ser His Ser Lys Leu Thr Phe Lys Gln Leu Arg Gln
 245 250 255
 Leu Asn Ile Asn Lys Asp Phe Val Ser Ile Asn Thr Ala Pro Cys Thr
 260 265 270
 Leu His His Lys Phe Ala Val Ile Asp Asn Lys Thr Leu Leu Ala Gly
 275 280 285
 Ser Ile Asn Trp Ser Lys Gly Arg Phe Ser Leu Asn Asp Glu Ser Leu
 290 295 300
 Ile Ile Leu Glu Asn Leu Thr Lys Gln Gln Asn Gln Lys Leu Arg Met
 305 310 315 320
 Ile Trp Lys Asp Leu Ala Lys His Ser Glu His Pro Thr Val Asp Asp
 325 330 335
 Glu Glu Lys Glu Ile Ile Glu Lys Ser Leu Pro Val Glu Glu Gln Glu
 340 345 350
 Ala Ala

<210>351

<211>243

<212>PRT

<213>Chlamydia pneumoniae

<400>351

Phe Ile Ser Ile Glu Met Leu Leu Leu Ser Arg Gln Leu Phe Ser Val
 1 5 10 15
 Leu Pro Ser Arg Phe Gln Asp Leu His Val Tyr Arg Phe Lys Glu Ser
 20 25 30
 Leu Lys Leu Leu Gln Phe Met Thr Met Val Gly Gly Glu Ile Val Val
 35 40 45
 Val Leu Ala Glu Ile Lys Glu Glu Asp Leu Arg Ala Arg Lys Leu Pro
 50 55 60
 Val Arg Lys Arg Arg Glu Lys Asn Tyr Leu Arg Ile Phe Arg Val Leu

65	70	75	80
Ser Arg Phe Asp Val Met Arg Ile Ile Arg Phe Asp Pro Tyr Gly Ala			
	85	90	95
Leu Ser Ala Gln Ser Ile Ala Lys Asp Ser Arg Gln Asn Ser Pro Leu			
	100	105	110
Val Glu Lys Ile Ser Glu Glu Ile Ala Thr Asn Glu Ala Ile Arg Leu			
	115	120	125
Ala Leu Leu Ala Ile Gly Asp Arg Glu Gln Glu Glu Lys Lys Gln Arg			
	130	135	140
His Arg Tyr Lys Leu Leu Gly Gln Lys Gln Ala Lys Val Leu Leu Ser			
	145	150	155
Gln Leu Arg His Val His Leu Asp Phe Lys Lys Leu Tyr Cys Asp Ser			
	165	170	175
Lys Lys Lys Glu Asp Gln Glu Lys Asp Glu Lys Asn Lys Gln Lys Arg			
	180	185	190
Ser Ile Lys Val Thr Lys Lys Lys Lys Gly Ile Ser Leu Gly Ala Ala			
	195	200	205
Ala Ser Gln Ala Ile Ala Ala Ala Glu Ala Trp Val Ile Ala Arg			
	210	215	220
Asn Lys Gly Val Leu Glu Thr Ala Ser Thr Leu Phe Tyr Gln Lys Asp			
	225	230	235
Glu Glu Ala			240

<210>352

<211>584

<212>PRT

<213>Chlamydia pneumoniae

<400>352

Ile Gln Arg Ile Ile Met Ala Val Ser Gly Gly Gly Gly Val Gln Pro			
1	5	10	15
Ser Ser Asp Pro Gly Lys Trp Asn Pro Ala Leu Gln Gly Glu Gln Ala			
	20	25	30
Glu Gly Pro Ser Pro Leu Lys Glu Ser Ile Phe Ser Glu Thr Lys Gln			
	35	40	45
Ala Ser Ser Ala Ala Lys Gln Glu Ser Leu Val Arg Ser Gly Ser Thr			
	50	55	60
Gly Met Tyr Ala Thr Glu Ser Gln Ile Asn Lys Ala Lys Tyr Arg Lys			
	65	70	75
Ala Gln Asp Arg Ser Ser Thr Ser Pro Lys Ser Lys Leu Lys Gly Thr			
	85	90	95
Phe Ser Lys Met Arg Ala Ser Val Gln Gly Phe Met Ser Gly Phe Gly			
	100	105	110
Ser Arg Ala Ser Arg Val Ser Ala Lys Arg Ala Ser Asp Ser Gly Glu			
	115	120	125
Gly Thr Ser Leu Leu Pro Thr Glu Met Asp Val Ala Leu Lys Lys Gly			
	130	135	140
Asn Arg Ile Ser Pro Glu Met Gln Gly Phe Phe Leu Asp Ala Ser Gly			
	145	150	155
Met Gly Gly Ser Ser Ser Asp Ile Ser Gln Leu Ser Leu Glu Ala Leu			
	165	170	175
Lys Ser Ser Ala Phe Ser Gly Ala Arg Ser Leu Ser Leu Ser Ser Ser			
	180	185	190
Glu Ser Ser Ser Val Ala Ser Phe Gly Ser Phe Gln Lys Ala Ile Glu			
	195	200	205
Pro Met Ser Glu Glu Lys Val Asn Ala Trp Thr Val Ala Arg Leu Gly			
	210	215	220
Gly Glu Met Val Ser Ser Leu Leu Asp Pro Asn Val Glu Thr Ser Ser			
	225	230	235
Leu Val Arg Arg Ala Met Ala Thr Gly Asn Glu Gly Met Ile Asp Leu			
	245	250	255
Ser Asp Leu Gly Gln Glu Glu Xaa Ser Thr Ala Met Thr Ser Pro Arg			
	260	265	270
Ala Val Glu Gly Lys Val Lys Val Ser Ser Ser Asp Ser Pro Glu Ala			
	275	280	285

Asn Pro Thr Gly Ile Pro Asn Ser Asn Thr Leu Glu Arg Ala Glu Lys
 290 295 300
 Glu Ala Glu Lys Gln Glu Ser Arg Glu Gln Leu Ser Glu Asp Gln Met
 305 310 315 320
 Met Leu Ala Arg Ala Met Ala Gly Leu Leu Thr Gly Ala Ala Pro Gln
 325 330 335
 Glu Val Leu Ser Asn Ser Val Trp Ser Gly Pro Ser Thr Val Phe Pro
 340 345 350
 Pro Pro Lys Phe Ser Gly Thr Leu Pro Thr Gln Arg Ser Gly Asp Lys
 355 360 365
 Ser Lys His Lys Ser Pro Gly Ile Glu Lys Ser Thr Asn His Thr Asn
 370 375 380
 Phe Ser Pro Leu Arg Glu Gly Thr Val Lys Ser Ala Glu Val Lys Ser
 385 390 395 400
 Leu Pro His Pro Glu Ser Met Tyr Arg Phe Pro Lys Asp Ser Ile Val
 405 410 415
 Ser Arg Glu Glu Pro Glu Ala Val Val Lys Glu Ser Thr Ala Phe Lys
 420 425 430
 Asn Pro Glu Asn Ser Ser Gln Asn Phe Leu Pro Ile Ala Val Glu Ser
 435 440 445
 Val Phe Pro Lys Glu Ser Gly Thr Gly Gly Ala Leu Gly Ser Asp Ala
 450 455 460
 Val Ser Ser Ser Tyr His Phe Leu Ala Gln Arg Gly Val Ser Leu Leu
 465 470 475 480
 Ala Pro Leu Pro Arg Ala Thr Asp Asp Tyr Lys Glu Lys Leu Glu Ala
 485 490 495
 His Lys Gly Pro Gly Gly Pro Pro Asp Pro Leu Ile Tyr Gln Tyr Arg
 500 505 510
 Asn Val Ala Val Glu Pro Pro Ile Val Leu Arg Ser Pro Gln Pro Phe
 515 520 525
 Ser Gly Ser Ser Arg Leu Ser Val Gln Gly Lys Pro Glu Ala Ala Ser
 530 535 540
 Val His Asp Asp Gly Gly Gly Gly Asn Ser Gly Gly Phe Ser Gly Asp
 545 550 555 560
 Gln Arg Arg Gly Ser Ser Gly Gln Lys Ala Ser Arg Gln Glu Lys Lys
 565 570 575
 Gly Lys Lys Leu Ser Thr Asp Ile
 580

<210>353

<211>271

<212>PRT

<213>Chlamydia pneumoniae

<400>353

Glu Ile Gly Met Leu Leu Arg Gly Ile Pro Ala Ala Glu Lys Ile Leu
 1 5 10 15
 Gln Arg Leu Lys Glu Glu Ile Ser Gln Ser Pro Thr Ser Pro Gly Leu
 20 25 30
 Ala Val Val Leu Ile Gly Asn Asp Pro Ala Ser Glu Val Tyr Val Gly
 35 40 45
 Met Lys Val Lys Lys Ala Thr Glu Ile Gly Ile Ile Ser Lys Ala His
 50 55 60
 Lys Leu Pro Ser Asp Ser Thr Leu Ser Ser Val Leu Lys Leu Ile Glu
 65 70 75 80
 Arg Leu Asn Gln Asp Pro Ser Ile His Gly Ile Leu Val Gln Leu Pro
 85 90 95
 Leu Pro Lys His Leu Asp Ser Glu Val Ile Leu Gln Ala Ile Ser Pro
 100 105 110
 Asp Lys Asp Val Asp Gly Leu His Pro Val Asn Met Gly Lys Leu Leu
 115 120 125
 Leu Gly Asn Phe Asp Gly Leu Leu Pro Cys Thr Pro Ala Gly Ile Ile
 130 135 140
 Glu Leu Leu Asn Tyr Tyr Glu Ile Pro Leu Arg Gly Arg His Ala Ala
 145 150 155 160
 Ile Val Gly Arg Ser Asn Ile Val Gly Lys Pro Leu Ala Ala Leu Met

165 170 175
 Met Gln Lys His Pro Gln Thr Asn Cys Thr Val Thr Val Leu His Ser
 180 185 190
 Gln Ser Glu Asn Leu Pro Glu Ile Leu Lys Thr Ala Asp Ile Ile Ile
 195 200 205
 Ala Ala Leu Gly Ala Pro Leu Phe Ile Lys Glu Thr Met Val Ala Pro
 210 215 220
 His Ala Val Ile Val Asp Val Gly Thr Thr Arg Val Pro Ala Asp Asn
 225 230 235 240
 Ala Lys Gly Tyr Thr Leu Leu Gly Asp Val Asp Phe Asn Asn Val Val
 245 250 255
 Thr Lys Cys Ala Glu Ser Leu Gln Phe Leu Glu Ala Leu Val Pro
 260 265 270

<210>354

<211>300

<212>PRT

<213>Chlamydia pneumoniae

<400>354

Arg Arg Trp Ser His Asp Cys Arg Tyr Ala His Glu Gln Tyr Met Ala
 1 5 10 15
 Met Leu Pro Lys Phe Phe Leu Val Leu Leu Cys Leu Gly Leu Cys Ser
 20 25 30
 Cys Ser Gln Lys Thr Thr Thr Ile Glu Gly Glu Gln Met Thr Ile Phe
 35 40 45
 Tyr Arg Ile Val Leu Gly Thr Ser Leu Ser Ala Lys Glu Lys Ala Ser
 50 55 60
 Leu Ser Gln Gln Ile Asp Arg Cys Phe His Lys Ile Asp Ser Ile Tyr
 65 70 75 80
 Asn Asn Trp Asn Pro Tyr Ser Glu Leu Ser Ile Ile Asn Arg Ala Pro
 85 90 95
 Ala Asp Val Pro Ile Thr Leu Ser Val Glu Leu Ser Glu Phe Leu Asp
 100 105 110
 Gln Val Asp Thr Leu Tyr Lys Leu Ser Glu Gly Arg Phe Asp Pro Thr
 115 120 125
 Val Gly Pro Leu Lys Thr Leu Trp Leu Leu His Leu Lys Ser Gln Thr
 130 135 140
 Leu Pro Pro Lys Asp Val Trp Glu Gln His Tyr Lys Asp Met Gly Trp
 145 150 155 160
 Gln His Leu Glu Phe Gln Ser Asn Thr Lys Thr Leu Ile Lys Lys Asn
 165 170 175
 Pro His Val Gln Ile Asp Leu Cys Gly Val Val Lys Gly Tyr Ala Val
 180 185 190
 Asp Cys Leu Asn Glu Ile Cys Asn Thr Phe Cys Pro Asn Asn Tyr Val
 195 200 205
 Glu Trp Gly Gly Glu Ile Lys Thr Ser Gly His His Pro Ser Gly Arg
 210 215 220
 Pro Trp Arg Ile Phe Ser Glu Ala Ala Gly Thr Ile Leu Asp Ile Asp
 225 230 235 240
 Asp Met Ala Ile Ala Thr Ser Gly Asn His Ile Gln Lys Trp Cys Val
 245 250 255
 Glu Gly Lys Ile Tyr Thr His Ile Leu Asp Thr Arg Thr Gly Lys Pro
 260 265 270
 Leu Glu Leu Ser Ser Tyr Pro Ile Gln Ser Val Ser Val Val His Pro
 275 280 285
 Thr Ala His Thr Pro Thr Leu Leu Pro Gln Ser Ser
 290 295 300

<210>355

<211>165

<212>PRT

<213>Chlamydia pneumoniae

<400>355

Leu Leu Tyr Trp Phe Leu Ser Pro Ile Met Gly Glu Asp Leu Met Ala
 1 5 10 15
 Gln Lys Glu Ile Val Ser Asn Arg Lys Ala Leu Arg Asn Tyr Glu Val

20 25 30
 Ile Glu Thr Leu Glu Ala Gly Ile Val Leu Thr Gly Thr Glu Ile Lys
 35 40 45
 Ser Leu Arg Asp His Gly Gly Asn Leu Gly Asp Ala Tyr Val Ile Val
 50 55 60
 Ser Lys Gly Glu Gly Trp Leu Leu Asn Ala Ser Ile Ala Pro Tyr Arg
 65 70 75 80
 Phe Gly Asn Ile Tyr Asn His Glu Glu Arg Arg Lys Arg Lys Leu Leu
 85 90 95
 Leu His Arg Tyr Glu Leu Arg Lys Leu Glu Gly Lys Ile Ala Gln Lys
 100 105 110
 Gly Met Thr Leu Ile Pro Leu Gly Met Phe Leu Ser Arg Gly Tyr Val
 115 120 125
 Lys Val Arg Leu Gly Cys Cys Arg Gly Lys Lys Ala Tyr Asp Lys Arg
 130 135 140
 Arg Thr Ile Ile Glu Arg Glu Lys Glu Arg Glu Val Ala Ala Ala Met
 145 150 155 160
 Lys Arg Arg His His
 165

<210>356

<211>135

<212>PRT

<213>Chlamydia pneumoniae

<400>356

Glu Asn Met Lys Phe Val Val Ser Arg Asn Glu Leu Gly Asn Leu Ile
 1 5 10 15
 Lys Lys Ile Gln Ser Val Val Pro Gln Asn Thr Pro Ile Pro Val Leu
 20 25 30
 Thr His Val Leu Ile Glu Thr Tyr Asn Asp Glu Leu Val Phe Thr Ala
 35 40 45
 Thr Asp Leu Thr Val Ser Thr Arg Cys Val Thr Lys Ala Lys Val Tyr
 50 55 60
 Glu Lys Gly Ala Ile Ser Ile Pro Ser Lys Arg Phe Phe Gln Leu Val
 65 70 75 80
 Lys Glu Leu Thr Glu Ala Asn Leu Glu Ile Ser Ser Ser Ala Gly Glu
 85 90 95
 Met Ala Gln Ile Thr Ser Gly Ser Ser Tyr Phe Ala Tyr Ser Ala Trp
 100 105 110
 Lys Lys Lys Thr Ser Pro Cys Ser Leu Ile Tyr Lys Met Leu Cys Val
 115 120 125
 Phe Pro Cys Leu Gln Ser Ser
 130 135

<210>357

<211>303

<212>PRT

<213>Chlamydia pneumoniae

<400>357

Glu Arg Arg Tyr Phe His Ser Leu Gln Glu Ile Phe Ser Ile Ser Lys
 1 5 10 15
 Arg Ile Asn Arg Gly Lys Phe Arg Asn Phe Leu Phe Ser Arg Gly Asn
 20 25 30
 Gly Thr Asn His Leu Gly Ile Phe Ile Phe Arg Leu Leu Ser Met Glu
 35 40 45
 Lys Glu Asp Phe Pro Met Leu Pro Asp Ile Gln Asn Ala Leu Arg Phe
 50 55 60
 Ser Leu Pro Ala Glu Gln Leu Lys Thr Met Leu Gln Arg Thr Ser Phe
 65 70 75 80
 Ala Val Ser Arg Glu Glu Ser Arg Tyr Val Leu Thr Gly Val Leu Leu
 85 90 95
 Ala Ile Ala Asn Gly Val Ala Thr Ile Val Gly Thr Asp Gly Lys Arg
 100 105 110
 Leu Ala Lys Ile Asp Ala Glu Val Thr Leu Asp Lys Ser Phe Ser Gly
 115 120 125
 Glu Tyr Ile Ile Pro Ile Lys Ala Val Glu Glu Ile Ile Lys Met Cys

130 135 140
 Ser Asp Glu Gly Glu Ala Thr Ile Phe Leu Asp Gln Asp Lys Ile Ala
 145 150 155 160
 Val Glu Cys Asp Asn Thr Leu Leu Ile Thr Lys Leu Leu Ser Gly Glu
 165 170 175
 Phe Pro Asp Phe Ser Pro Val Ile Ser Thr Glu Ser Asn Val Lys Leu
 180 185 190
 Asp Leu His Arg Glu Glu Leu Ile Thr Leu Leu Lys Gln Val Ala Leu
 195 200 205
 Phe Thr Asn Glu Ser Ser His Ser Val Lys Phe Ser Phe Leu Pro Gly
 210 215 220
 Glu Leu Thr Leu Thr Ala Asn Cys Thr Lys Val Gly Glu Gly Lys Val
 225 230 235 240
 Ser Met Ala Val Asn Tyr Ser Gly Glu Leu Leu Glu Ile Ala Phe Asn
 245 250 255
 Pro Phe Phe Phe Leu Asp Ile Leu Lys His Ser Lys Asp Glu Leu Val
 260 265 270
 Ser Leu Gly Ile Ser Asp Ser Tyr Asn Pro Gly Ile Ile Thr Asp Ser
 275 280 285
 Ala Ser Gly Leu Phe Val Ile Met Pro Met Arg Leu His Asp Asp
 290 295 300

<210>358

<211>218

<212>PRT

<213>Chlamydia pneumoniae

<400>358

Pro Leu Tyr Pro Leu Leu Ile Val Leu Ser Ser Arg Ser Ser Ala Glu
 1 5 10 15
 Lys Cys Ser Leu Lys Lys Gln Ala Asn Leu Asn Arg Gly Leu Trp Asp
 20 25 30
 Glu Gln Leu Val Lys His Gly Thr Tyr Leu Ser Ile Gln Arg Phe Leu
 35 40 45
 Cys Ser Gln Lys Leu Ser Asp Leu Ser Lys Glu Leu Trp Ser Asn Asn
 50 55 60
 Leu Lys Glu Gln Leu Ala Leu Lys Phe Lys Ser Ser Leu Ile Lys Asn
 65 70 75 80
 Ser Asp Ile Ser Glu Thr Ala Val Ala Glu Glu Phe His Lys Gln Leu
 85 90 95
 Ser Ile Ser Leu Pro Arg Asp Leu Glu Trp Gly Ser Thr Ser Val Gly
 100 105 110
 Pro His Arg Glu Asp Phe Leu Leu Thr Met Asn Gln Met Pro Val Ser
 115 120 125
 Gln Phe Ser Ser Glu Gly Gln Lys His Ser Leu Leu Ala Ile Leu Arg
 130 135 140
 Leu Ala Glu Cys Leu Tyr Leu Lys Gln Ser His His Val Ser Pro Leu
 145 150 155 160
 Val Cys Leu Asp Asp Ile His Ala Gly Leu Asp Asn Glu Arg Val Gly
 165 170 175
 Gln Leu Leu Asp Pro Ala Pro Thr Leu Gly Gln Thr Leu Ile Thr Ser
 180 185 190
 Thr His Met His Gly Glu Leu Pro Lys Thr Ser Leu Val Leu Ser Ile
 195 200 205
 Glu Asn Ala Gln Val Ser Glu Gln Ile Ile
 210 215

<210>359

<211>127

<212>PRT

<213>Chlamydia pneumoniae

<400>359

His Met Lys Lys Phe Leu Leu Thr Ile Leu Phe Leu Ala Val Gly Asn
 1 5 10 15
 Pro Leu Phe Ser Glu Thr Ser Val Ile Gln Thr Leu Pro Ser Gly Ile
 20 25 30
 Gly Gly Leu Lys Glu Thr Ser Lys Gln Lys Glu Ser Val Val Cys Val

35 40 45
 His Ala Phe Leu Arg Ser Tyr Thr Ser Leu Lys Pro Ile Ala Arg Val
 50 55 60
 Leu Glu Lys Glu His Tyr Asp Val Phe Ile Trp Asn Tyr Glu Thr Arg
 65 70 75 80
 Lys Phe Thr Leu Glu Lys His Ala Glu His Leu Asn Arg Leu Leu Lys
 85 90 95
 Lys Ile Ala Glu Leu Lys Pro Gly Val Pro Ile Asn Phe Val Thr His
 100 105 110
 Ser Ile Gly Gly Val Ile Val Arg Ala Leu Ala Glu Lys Asn Ser
 115 120 125

<210>360

<211>244

<212>PRT

<213>Chlamydia pneumoniae

<400>360

Leu Ile Leu Leu Glu Glu Ser Leu Phe Val Arg Leu Leu Lys Lys Ile
 1 5 10 15
 Ala Glu Leu Lys Pro Gly Val Pro Ile Asn Phe Val Thr His Ser Ile
 20 25 30
 Gly Gly Val Ile Val Arg Val Ala Leu Ala His Pro Asp Cys Pro Glu
 35 40 45
 Glu Ala Lys Lys Gly Lys Ala Ile Leu Met Ala Pro Pro Asn Ala Gly
 50 55 60
 Ser Thr Leu Ala Arg Arg Tyr Arg Cys Val Lys Phe Val Gln Phe Val
 65 70 75 80
 Phe Gly Gly Lys Leu Gly Arg Gln Leu Leu Thr Tyr Cys Pro Thr Lys
 85 90 95
 Met Leu Asn Val Gly Lys Leu Pro Ser Ser Leu Asp Val Leu Ile Leu
 100 105 110
 Ser Gly Asn Arg His Ser Lys Phe Leu Pro Phe Arg Leu Pro Tyr Glu
 115 120 125
 Asn Asp Gly Lys Val Cys Thr Ile Glu Thr Lys Leu Asp Thr Pro His
 130 135 140
 Lys Ala Tyr Val Ile His Thr Ser His Thr Tyr Ile Ile Thr Asn Arg
 145 150 155 160
 Lys Ser Leu Tyr Leu Met Lys Glu Phe Leu Lys Glu Gly Asn Thr Thr
 165 170 175
 Pro Ile Ile Glu His Val Pro Glu Ala Ala Leu Glu Gln Thr Val Met
 180 185 190
 Glu Asp Lys Gln Lys Asn Ser Arg Leu Lys Pro Tyr Pro Asn Gln Asp
 195 200 205
 Ile Tyr Val Ile His Cys Phe Gly Ser Arg Pro Tyr Asn Leu Tyr Gly
 210 215 220
 Phe Pro Lys Lys Trp Ser Leu Asn Gln Lys Asn Glu Ile Asn Pro Glu
 225 230 235 240
 Lys Leu Glu Lys

<210>361

<211>621

<212>PRT

<213>Chlamydia pneumoniae

<400>361

Met Thr Ile Ile Tyr Phe Ile Leu Ala Ala Leu Ala Leu Gly Ile Leu
 1 5 10 15
 Val Leu Ile His Glu Leu Gly His Leu Val Val Ala Lys Ala Val Gly
 20 25 30
 Met Ala Val Glu Ser Phe Ser Ile Gly Phe Gly Pro Ala Leu Phe Lys
 35 40 45
 Lys Arg Ile Gly Gly Ile Glu Tyr Arg Ile Gly Cys Ile Pro Phe Gly
 50 55 60
 Gly Tyr Val Arg Ile Arg Gly Met Glu Arg Thr Lys Glu Lys Gly Glu
 65 70 75 80
 Lys Gly Lys Ile Asp Ser Val Tyr Asp Ile Pro Gln Gly Phe Phe Ser

					85						90						95
Lys	Ser	Pro	Trp		Lys	Arg	Ile	Leu	Val	Leu	Val	Ala	Gly	Pro	Leu	Ala	
				100					105					110			
Asn	Ile	Leu	Ala	Val	Leu	Ala	Phe	Ser	Ile	Leu	Tyr	Met	Asn	Gly			
		115				120					125						
Gly	Arg	Ser	Lys	Asn	Tyr	Ser	Asp	Cys	Ser	Lys	Val	Val	Gly	Trp	Val		
		130				135					140						
His	Pro	Val	Leu	Gln	Ala	Glu	Gly	Leu	Leu	Pro	Gly	Asp	Glu	Ile	Leu		
		145				150					155			160			
Thr	Cys	Asn	Gly	Lys	Pro	Tyr	Val	Gly	Asp	Lys	Asp	Met	Leu	Thr	Thr		
		165							170					175			
Ser	Leu	Leu	Glu	Gly	His	Leu	Asn	Leu	Glu	Ile	Lys	Arg	Pro	Gly	Tyr		
		180							185					190			
Leu	Thr	Val	Pro	Ser	Lys	Glu	Phe	Ala	Ile	Asp	Val	Glu	Phe	Asp	Pro		
		195				200					205						
Thr	Lys	Phe	Gly	Val	Pro	Cys	Ser	Gly	Ala	Ser	Tyr	Leu	Leu	Tyr	Gly		
		210				215					220						
Asn	Gln	Val	Pro	Leu	Thr	Lys	Asn	Ser	Pro	Met	Glu	Asn	Ser	Glu	Leu		
		225				230					235				240		
Arg	Pro	Asn	Asp	Arg	Phe	Val	Trp	Met	Asp	Gly	Thr	Leu	Leu	Phe	Ser		
		245							250					255			
Met	Ala	Gln	Ile	Ser	Gln	Ile	Leu	Asn	Glu	Ser	Tyr	Ala	Phe	Val	Lys		
		260							265					270			
Val	Ala	Arg	Asn	Asp	Lys	Ile	Phe	Phe	Ser	Arg	Gln	Pro	Arg	Val	Leu		
		275				280					285						
Ala	Ser	Val	Leu	His	Tyr	Thr	Pro	Tyr	Leu	Arg	Asn	Glu	Leu	Ile	Asp		
		290				295					300						
Thr	Gln	Tyr	Glu	Ala	Gly	Leu	Lys	Gly	Lys	Trp	Ser	Ser	Leu	Tyr	Thr		
		305				310					315				320		
Leu	Pro	Tyr	Val	Ile	Asn	Ser	Tyr	Gly	Tyr	Ile	Glu	Gly	Glu	Leu	Thr		
		325							330					335			
Ala	Ile	Asp	Pro	Glu	Ser	Pro	Leu	Pro	Gln	Pro	Gln	Glu	Arg	Leu	Gln		
		340							345					350			
Leu	Gly	Asp	Arg	Ile	Leu	Ala	Ile	Asp	Gly	Thr	Pro	Val	Ser	Gly	Ser		
		355				360					365						
Val	Asp	Ile	Leu	Arg	Leu	Val	Gln	Asn	His	Arg	Val	Ser	Ile	Ile	Val		
		370				375					380						
Gln	Gln	Met	Ser	Pro	Gln	Glu	Leu	Glu	Glu	Val	Asn	Ser	Arg	Asp	Ala		
		385				390					395				400		
Asp	Lys	Arg	Phe	Ile	Ala	Ser	Tyr	His	Ser	Glu	Asp	Leu	Leu	Gln	Ile		
		405							410					415			
Leu	Asn	His	Leu	Gly	Glu	Ser	His	Pro	Val	Glu	Val	Ala	Gly	Pro	Tyr		
		420							425					430			
Arg	Leu	Leu	Asp	Pro	Val	Gln	Pro	Arg	Pro	Trp	Ile	Asp	Val	Tyr	Ser		
		435							440					445			
Ser	Glu	Ser	Leu	Asp	Lys	Gln	Leu	Glu	Val	Ala	Lys	Lys	Ile	Lys	Asn		
		450				455					460						
Lys	Asp	Lys	Gln	Arg	Tyr	Leu	Glu	Arg	Leu	Asp	Ala	Glu	Lys	Gln			
		465				470					475			480			
Lys	Pro	Ser	Leu	Gly	Ile	Ser	Leu	Lys	Asp	Leu	Lys	Val	Arg	Tyr	Asn		
		485							490					495			
Pro	Ser	Pro	Val	Met	Leu	Ser	Asn	Ile	Thr	Lys	Glu	Ser	Leu	Ile			
		500							505					510			
Thr	Leu	Lys	Ala	Leu	Val	Thr	Gly	His	Leu	Ser	Pro	Gln	Trp	Leu	Ser		
		515							520					525			
Gly	Pro	Val	Gly	Ile	Val	Gln	Val	Leu	His	Thr	Gly	Trp	Ser	Val	Gly		
		530				535					540						
Phe	Ser	Glu	Val	Leu	Phe	Trp	Ile	Gly	Leu	Ile	Ser	Met	Asn	Leu	Ala		
		545				550					555				560		
Val	Leu	Asn	Leu	Leu	Pro	Ile	Pro	Val	Leu	Asp	Gly	Gly	Tyr	Ile	Leu		
		565							570					575			
Leu	Cys	Leu	Trp	Glu	Ile	Val	Thr	Arg	Arg	Leu	Asn	Met	Lys	Ile			
		580							585					590			
Val	Glu	Arg	Ile	Leu	Val	Pro	Phe	Thr	Phe	Leu	Leu	Ile	Ile	Phe	Phe		

595 600 605
 Ile Phe Leu Thr Phe Gln Asp Leu Phe Arg Phe Phe Gly
 610 615 620
 <210>362
 <211>340
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>362
 Ser Lys Val Ile Phe Gln Gln Leu Gln Glu Phe Ala Pro Leu Ala Ala
 1 5 10 15
 Ala Val Tyr Asn Glu Glu Val Tyr Asn Glu Ala Cys Gln Arg Phe Pro
 20 25 30
 His Met Gln Phe Phe Leu Gly Gln Glu Gly Leu Thr Gln Leu Cys Ile
 35 40 45
 Met Asp Thr Val Thr Thr Val Val Ala Ala Ser Ser Gly Ile Glu Ala
 50 55 60
 Leu Pro Ala Ile Leu Glu Ser Met Lys Lys Gly Lys Ala Leu Ala Leu
 65 70 75 80
 Ala Asn Lys Glu Ile Leu Val Cys Ala Gly Glu Leu Val Ser Lys Thr
 85 90 95
 Ala Lys Glu Asn Gly Ile Lys Val Leu Pro Ile Asp Ser Glu His Asn
 100 105 110
 Ala Leu Tyr Gln Cys Leu Glu Gly Arg Thr Ile Glu Gly Ile Lys Lys
 115 120 125
 Leu Ile Leu Thr Ala Ser Gly Gly Pro Leu Leu Asn Lys Ser Leu Glu
 130 135 140
 Glu Leu Ser Cys Val Thr Lys Gln Asp Val Leu Asn His Pro Ile Trp
 145 150 155 160
 Asn Met Gly Ser Lys Val Thr Val Asp Ser Ser Thr Leu Val Asn Lys
 165 170 175
 Gly Leu Glu Ile Ile Glu Ala Tyr Trp Leu Phe Gly Leu Glu Asn Val
 180 185 190
 Glu Ile Leu Ala Val Ile His Pro Gln Ser Leu Ile His Gly Met Val
 195 200 205
 Glu Phe Leu Asp Gly Ser Val Ile Ser Ile Met Asn Pro Pro Asp Met
 210 215 220
 Leu Phe Pro Ile Gln Tyr Ala Leu Thr Ala Pro Glu Arg Phe Ala Ser
 225 230 235 240
 Pro Arg Asp Gly Met Asp Phe Ser Lys Lys Gln Thr Leu Glu Phe Phe
 245 250 255
 Pro Val Asp Glu Glu Arg Phe Pro Ser Ile Arg Leu Ala Gln Gln Val
 260 265 270
 Leu Glu Lys Gln Gly Ser Ser Gly Ser Phe Phe Asn Ala Ala Asn Glu
 275 280 285
 Val Leu Val Arg Arg Phe Leu Cys Glu Glu Ile Ser Trp Cys Asp Ile
 290 295 300
 Leu Arg Lys Leu Thr Thr Leu Met Glu Cys His Lys Val Tyr Ala Cys
 305 310 315 320
 His Ser Leu Glu Asp Ile Leu Glu Val Asp Gly Glu Ala Arg Ala Leu
 325 330 335
 Ala Gln Glu Ile
 340
 <210>363
 <211>329
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>363
 Lys Lys Gly Ser Leu Met Ala Leu Gly Pro Ser Pro Tyr Tyr Gly Val
 1 5 10 15
 Ser Phe Phe Gln Phe Phe Ser Val Phe Phe Ser Arg Leu Phe Ser Gly
 20 25 30
 Ser Leu Phe Thr Gly Ser Leu Tyr Ile Asp Asp Ile Gln Ile Ile Val
 35 40 45
 Phe Leu Ala Ile Ser Cys Ser Gly Ala Phe Ala Gly Thr Phe Leu Val

50 55 60
 Leu Arg Lys Met Ala Met Tyr Ala Asn Ala Val Ser His Thr Val Leu
 65 70 75 80
 Phe Gly Leu Val Cys Val Cys Leu Phe Thr His Gln Leu Thr Thr Leu
 85 90 95
 Ser Leu Gly Thr Leu Thr Leu Ala Ala Met Ala Thr Ala Met Leu Thr
 100 105 110
 Gly Phe Leu Ile Tyr Phe Ile Arg Asn Thr Phe Lys Val Ser Glu Glu
 115 120 125
 Ser Ser Thr Ala Leu Val Phe Ser Leu Leu Phe Ser Leu Ser Leu Val
 130 135 140
 Leu Leu Val Phe Met Thr Lys Asn Ala His Ile Gly Thr Glu Leu Val
 145 150 155 160
 Leu Gly Asn Ala Asp Ser Leu Thr Lys Glu Asp Ile Phe Pro Val Thr
 165 170 175
 Ile Val Ile Leu Ala Asn Ala Val Ile Thr Ile Phe Ala Phe Arg Ser
 180 185 190
 Leu Val Cys Ser Ser Phe Asp Ser Val Phe Ala Ser Ser Leu Gly Ile
 195 200 205
 Pro Ile Arg Leu Val Asp Tyr Leu Ile Ile Phe Gln Leu Ser Ala Cys
 210 215 220
 Leu Val Gly Ala Phe Lys Ala Val Gly Val Leu Met Ala Leu Ala Phe
 225 230 235 240
 Leu Ile Ile Pro Ser Leu Ile Ala Lys Val Ile Ala Lys Ser Ile Arg
 245 250 255
 Ser Leu Met Ala Trp Ser Leu Val Phe Ser Ile Xaa Thr Ala Phe Leu
 260 265 270
 Ala Pro Ala Ser Ser Arg Ala Ile Leu Ser Ala Tyr Asp Leu Gly Leu
 275 280 285
 Ser Thr Ser Gly Ile Ser Val Val Phe Leu Thr Met Met Tyr Ile Val
 290 295 300
 Val Lys Phe Ile Ser Tyr Phe Arg Gly Tyr Phe Ser Lys Asn Phe Glu
 305 310 315 320
 Lys Ile Ser Glu Lys Ser Ser Gln Tyr
 325

<210>364

<211>391

<212>PRT

<213>Chlamydia pneumoniae

<400>364

Trp Arg Asn Met Phe Ser His Cys Lys Leu Leu Phe Phe Gly Leu Cys
 1 5 10 15
 Cys Leu Gly Val Leu Leu Arg Tyr Leu Val Met Gly Ile Ile Val Phe
 20 25 30
 Leu Gly Lys Val Cys Lys Leu His Lys Asp Ser Ala Leu Cys Phe Val
 35 40 45
 Leu Val Val Phe Phe Ala Ile Gly Val Ile Leu Ala Ser Tyr Val Lys
 50 55 60
 Glu Ser Ser Pro Thr Leu Tyr Asn Arg Ile Asn Ala Tyr Leu Tyr Gly
 65 70 75 80
 Gln Ala Ala Thr Leu Gly Phe Leu Glu Ala Thr Leu Ala Ala Ile Val
 85 90 95
 Phe Cys Ala Ser Leu Phe Ala Leu Trp Trp Tyr Arg Gln Ile Val
 100 105 110
 Val Thr Thr Phe Asp Lys Asp Phe Ala Val Thr Cys Gly Leu Lys Thr
 115 120 125
 Val Leu Tyr Glu Ala Leu Ser Leu Ile Phe Ile Ser Leu Val Ile Val
 130 135 140
 Ser Gly Val Arg Ser Val Gly Ile Val Leu Ile Ser Ala Met Phe Val
 145 150 155 160
 Ala Pro Ser Leu Gly Ala Arg Gln Leu Ser Asp Arg Leu Ser Thr Ile
 165 170 175
 Leu Ile Leu Ser Ala Phe Phe Gly Gly Ile Ser Gly Ala Leu Gly Ser
 180 185 190

Tyr Ile Ser Val Ala Phe Thr Cys Arg Ala Ile Ile Gly Gln Gln Ala
 195 200 205
 Val Pro Val Thr Leu Pro Thr Gly Pro Leu Val Val Ile Cys Ala Gly
 210 215 220
 Leu Leu Ala Gly Leu Cys Leu Leu Phe Ser Pro Lys Ser Gly Trp Val
 225 230 235 240
 Ile Arg Phe Val Arg Arg Lys His Phe Ser Phe Ser Lys Asp Gln Glu
 245 250 255
 His Leu Leu Lys Val Phe Trp His Ile Ser His Asn Arg Leu Glu Asn
 260 265 270
 Ile Ser Val Arg Asp Phe Val Cys Ser Tyr Lys Tyr Gln Glu Tyr Phe
 275 280 285
 Gly Pro Lys Pro Phe Pro Arg Trp Arg Val Gln Ile Leu Glu Trp Arg
 290 295 300
 Gly Tyr Val Lys Lys Glu Gln Asp Tyr Tyr Arg Leu Thr Lys Lys Gly
 305 310 315 320
 Arg Ser Glu Ala Leu Arg Leu Val Arg Ala His Arg Leu Trp Glu Ser
 325 330 335
 Tyr Leu Val Asn Ser Leu Asp Phe Ser Lys Glu Ser Val His Glu Leu
 340 345 350
 Ala Glu Glu Ile Glu His Val Leu Thr Glu Glu Leu Asp His Thr Leu
 355 360 365
 Thr Glu Ile Leu Asn Asp Pro Cys Tyr Asp Pro His Arg Gln Ile Ile
 370 375 380
 Pro Asn Lys Lys Lys Glu Val
 385 390

<210>365

<211>113

<212>PRT

<213>Chlamydia pneumoniae

<400>365

Thr Phe Gly Thr Asn Pro Glu Ala Leu Ser Arg Lys Thr Ile Trp Ile
 1 5 10 15
 Val Leu Ile Met Leu Ser Cys Val Phe Ser Asp Thr Ile Phe Leu Ser
 20 25 30
 Ser Phe Leu Ala Val Thr Leu Ile Cys Met Thr Thr Ala Leu Trp Gly
 35 40 45
 Thr Ile Leu Leu Ile Ser Lys Gln Pro Leu Leu Ser Glu Ser Leu Ser
 50 55 60
 His Ala Ser Tyr Pro Gly Leu Leu Val Gly Ala Leu Met Ala Gln Tyr
 65 70 75 80
 Val Phe Ser Leu Gln Ala Ser Ile Phe Trp Ile Val Leu Phe Gly Cys
 85 90 95
 Ala Ala Ser Val Phe Gly Tyr Gly Asp His Cys Phe Leu Arg Glu Ser
 100 105 110
 Met

<210>366

<211>259

<212>PRT

<213>Chlamydia pneumoniae

<400>366

Leu Asn Val Lys Asp Glu Thr Phe Trp Ser Val His Asn Leu Cys Val
 1 5 10 15
 Asn Tyr Glu His Ala Ala Val Leu Tyr His Ile Ser Phe Ser Leu Gly
 20 25 30
 Lys Gly Ser Leu Thr Ala Ile Leu Gly Pro Asn Gly Ala Gly Lys Ser
 35 40 45
 Thr Leu Leu Lys Ala Ser Leu Gly Leu Ile Lys Pro Ser Ser Gly Thr
 50 55 60
 Val Tyr Phe Phe Asn Gln Lys Phe Lys Lys Val Arg Gln Arg Ile Ala
 65 70 75 80
 Tyr Met Pro Gln Arg Ala Ser Val Asp Trp Asp Phe Pro Met Thr Val
 85 90 95

Leu Asp Leu Ala Leu Met Gly Cys Tyr Ser Tyr Lys Gly Met Trp Gly
 100 105 110
 Arg Ile Ser Ser Asp Asp Arg Arg Glu Ala Phe His Ile Leu Glu Arg
 115 120 125
 Val Gly Leu Glu Ser Val Ala Asp Arg Gln Ile Gly Gln Leu Ser Gly
 130 135 140
 Gly Gln Gln Gln Arg Ala Phe Leu Ala Arg Ala Leu Met Gln Lys Ala
 145 150 155 160
 Asp Leu Tyr Leu Met Asp Glu Leu Phe Ser Ala Ile Asp Met Ala Ser
 165 170 175
 Phe Lys Thr Ser Val Gly Val Leu Gln Glu Leu Arg Asp Gln Gly Lys
 180 185 190
 Thr Ile Val Val Val His His Asp Leu Ser His Val Arg Gln Leu Phe
 195 200 205
 Asp His Val Val Leu Leu Asn Lys Arg Leu Ile Cys Cys Gly Pro Thr
 210 215 220
 Asp Glu Cys Leu Asn Gly Asp Thr Ile Phe Gln Thr Tyr Gly Cys Glu
 225 230 235 240
 Ile Glu Leu Leu Glu Gln Thr Leu Lys Leu Ser Arg Gly Lys Gln Phe
 245 250 255
 Gly Ser Cys

<210>367

<211>336

<212>PRT

<213>Chlamydia pneumoniae

<400>367

Trp Ile Leu Lys Asn Ala Ser Arg Glu Met Asp Ala Lys Met Gly Tyr
 1 5 10 15
 Ile Phe Lys Val Met Arg Trp Ile Phe Cys Phe Val Ala Cys Gly Ile
 20 25 30
 Thr Phe Gly Cys Thr Asn Ser Gly Phe Gln Asn Ala Asn Ser Arg Pro
 35 40 45
 Cys Ile Leu Ser Met Asn Arg Met Ile His Asp Cys Val Glu Arg Val
 50 55 60
 Val Gly Asn Arg Leu Ala Thr Ala Val Leu Ile Lys Gly Ser Leu Asp
 65 70 75 80
 Pro His Ala Tyr Glu Met Val Lys Gly Asp Lys Asp Lys Ile Ala Gly
 85 90 95
 Ser Ala Val Ile Phe Cys Asn Gly Leu Gly Leu Glu His Thr Leu Ser
 100 105 110
 Leu Arg Lys His Leu Glu Asn Asn Pro Asn Ser Val Lys Leu Gly Glu
 115 120 125
 Arg Leu Ile Ala Arg Gly Ala Phe Val Pro Leu Glu Glu Asp Gly Ile
 130 135 140
 Cys Asp Pro His Ile Trp Met Asp Leu Ser Ile Trp Lys Glu Ala Val
 145 150 155 160
 Ile Glu Ile Thr Glu Val Leu Ile Glu Lys Phe Pro Glu Trp Ser Ala
 165 170 175
 Glu Phe Lys Ala Asn Ser Glu Glu Leu Val Cys Glu Met Ser Ile Leu
 180 185 190
 Asp Ser Trp Ala Lys Gln Cys Leu Ser Thr Ile Pro Glu Asn Leu Arg
 195 200 205
 Tyr Leu Val Ser Gly His Asn Ala Phe Ser Tyr Phe Thr Arg Arg Tyr
 210 215 220
 Leu Ala Thr Pro Glu Glu Val Ala Ser Gly Ala Trp Arg Ser Arg Cys
 225 230 235 240
 Ile Ser Pro Glu Gly Leu Ser Pro Glu Ala Gln Ile Ser Val Arg Asp
 245 250 255
 Ile Met Ala Val Val Asp Tyr Ile Asn Glu His Asp Val Ser Val Val
 260 265 270
 Phe Pro Glu Asp Thr Leu Asn Gln Asp Ala Leu Lys Lys Ile Val Ser
 275 280 285
 Ser Leu Lys Lys Ser His Leu Val Arg Leu Ala Gln Lys Pro Leu Tyr

290 295 300
 Ser Asp Asn Val Asp Asp Asn Tyr Phe Ser Thr Phe Lys His Asn Val
 305 310 315 320
 Cys Leu Ile Thr Glu Glu Leu Gly Gly Val Ala Leu Glu Cys Gln Arg
 325 330 335
 <210>368
 <211>172
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>368
 Lys Val Gly Phe Met Ala Val Glu Gln Ser His Ile Lys Glu Glu Ile
 1 5 10 15
 Glu Lys Leu Ile Gly Lys Ala Ile Lys Arg Val Cys Gly Asn Lys Glu
 20 25 30
 Asn Asp Leu Cys Arg Tyr Leu Pro Gly Pro Ser Gly Gly Tyr Met His
 35 40 45
 His Phe Thr Leu Lys Lys Met Lys Ser Ala Ala Pro Glu Gln Leu Leu
 50 55 60
 Lys Met Leu Lys Thr Phe Ile Leu Glu Ser Glu Thr Pro Arg Thr Ile
 65 70 75 80
 Asn Pro Lys Pro Arg Ala Pro Arg Gly Ser Lys Lys Arg Arg Asp Phe
 85 90 95
 Ile Asn Phe Thr Lys Thr Asp Ile Glu Arg Val Leu Glu Leu Ala Arg
 100 105 110
 Gln Val Gly Asp Lys Asp Leu Leu Ala Arg Phe Ser Pro Lys Lys Pro
 115 120 125
 Leu Thr Ser Leu Lys Arg Glu Leu Ile Arg Ser Ile Arg Asn Gly Ile
 130 135 140
 Val Ser Val Glu Leu Trp Asn Ala Tyr Val Glu Ala Val Lys Ala Val
 145 150 155 160
 Ser Ser Pro Asn Leu Glu Val Thr Ser Pro Phe Val
 165 170
 <210>369
 <211>524
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>369
 Lys Ile Lys Val Phe Gln Arg Val Asn Met Thr Lys Thr Glu Glu Lys
 1 5 10 15
 Pro Phe Gly Lys Leu Arg Ser Phe Leu Trp Pro Ile His Thr His Glu
 20 25 30
 Leu Lys Lys Val Leu Pro Met Phe Leu Met Phe Phe Cys Ile Thr Phe
 35 40 45
 Asn Tyr Thr Val Leu Arg Asp Thr Lys Asp Thr Leu Ile Val Gly Ala
 50 55 60
 Pro Gly Ser Gly Ala Glu Ala Ile Pro Phe Ile Lys Phe Trp Leu Val
 65 70 75 80
 Val Pro Cys Ala Ile Ile Phe Met Leu Ile Tyr Ala Lys Leu Ser Asn
 85 90 95
 Ile Leu Ser Lys Gln Ala Leu Phe Tyr Ala Val Gly Thr Pro Phe Leu
 100 105 110
 Ile Phe Phe Ala Leu Phe Pro Thr Val Ile Tyr Pro Leu Arg Asp Val
 115 120 125
 Leu His Pro Thr Glu Phe Ala Asp Arg Leu Gln Ala Ile Leu Pro Pro
 130 135 140
 Gly Leu Leu Gly Leu Val Ala Ile Leu Arg Asn Trp Thr Phe Ala Ala
 145 150 155 160
 Phe Tyr Val Leu Ala Glu Leu Trp Gly Ser Val Met Leu Ser Leu Met
 165 170 175
 Phe Trp Gly Phe Ala Asn Glu Ile Thr Lys Ile His Glu Ala Lys Arg
 180 185 190
 Phe Tyr Ala Leu Phe Gly Ile Gly Ala Asn Ile Ser Leu Leu Ala Ser
 195 200 205
 Gly Arg Ala Ile Val Trp Ala Ser Lys Leu Arg Ala Ser Val Ser Glu

210 215 220
 Gly Val Asp Pro Trp Gly Ile Ser Leu Arg Leu Leu Met Ala Met Thr
 225 230 235 240
 Ile Val Ser Gly Leu Val Leu Met Ala Ser Tyr Trp Trp Ile Asn Lys
 245 250 255
 Asn Val Leu Thr Asp Pro Arg Phe Tyr Asn Pro Glu Glu Met Gln Lys
 260 265 270
 Gly Lys Lys Gly Ala Lys Pro Lys Met Asn Met Lys Asp Ser Phe Leu
 275 280 285
 Tyr Leu Ala Arg Ser Pro Tyr Ile Leu Leu Leu Ala Leu Leu Val Ile
 290 295 300
 Ala Tyr Gly Ile Cys Ile Asn Leu Ile Glu Val Thr Trp Lys Ser Gln
 305 310 315 320
 Leu Lys Leu Gln Tyr Pro Asn Met Asn Asp Tyr Ser Glu Phe Met Gly
 325 330 335
 Asn Phe Ser Phe Trp Thr Gly Val Val Ser Val Leu Ile Met Leu Phe
 340 345 350
 Val Gly Gly Asn Val Ile Arg Lys Phe Gly Trp Leu Thr Gly Ala Leu
 355 360 365
 Val Thr Pro Val Met Val Leu Leu Thr Gly Ile Val Phe Phe Ala Leu
 370 375 380
 Val Ile Phe Arg Asn Gln Ala Ser Gly Leu Val Ala Met Phe Gly Thr
 385 390 395 400
 Thr Pro Leu Met Leu Ala Val Val Val Gly Ala Ile Gln Asn Ile Leu
 405 410 415
 Ser Lys Ser Thr Lys Tyr Ala Leu Phe Asp Ser Thr Lys Glu Met Ala
 420 425 430
 Tyr Ile Pro Leu Asp Gln Glu Gln Lys Val Lys Gly Lys Ala Ala Ile
 435 440 445
 Asp Val Val Ala Ala Arg Phe Gly Lys Ser Gly Gly Ala Leu Ile Gln
 450 455 460
 Gln Gly Leu Leu Val Ile Cys Gly Ser Ile Gly Ala Met Thr Pro Tyr
 465 470 475 480
 Leu Ala Val Ile Leu Leu Phe Ile Ile Ala Ile Trp Leu Val Ser Ala
 485 490 495
 Thr Lys Leu Asn Lys Leu Phe Leu Ala Gln Ser Ala Leu Lys Glu Gln
 500 505 510
 Glu Val Ala Gln Glu Asp Ser Ala Pro Ala Ser Ser
 515 520
 <210>370
 <211>448
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>370
 Leu Pro Phe His Glu Phe Val Arg Phe Phe Gln Ser Lys Lys Val Ile
 1 5 10 15
 Ile Thr Val Arg His Ser Gly Cys Thr Met Lys Cys Ser Pro Leu Thr
 20 25 30
 Leu Val Pro His Ile Phe Leu Lys Asn Asp Cys Glu Cys His Arg Ser
 35 40 45
 Cys Ser Leu Lys Ile Arg Thr Ile Ala Arg Leu Ile Leu Gly Leu Val
 50 55 60
 Leu Ala Leu Val Ser Ala Leu Ser Phe Val Phe Leu Ala Ala Pro Ile
 65 70 75 80
 Ser Tyr Ala Ile Gly Gly Thr Leu Ala Leu Ala Ala Ile Val Ile Leu
 85 90 95
 Ile Ile Thr Leu Val Val Ala Leu Leu Ala Lys Ser Lys Val Leu Pro
 100 105 110
 Ile Pro Asn Glu Leu Gln Lys Ile Ile Tyr Asn Arg Tyr Pro Lys Glu
 115 120 125
 Val Phe Tyr Phe Val Lys Thr His Ser Leu Thr Val Asn Glu Leu Lys
 130 135 140
 Ile Phe Ile Asn Cys Trp Lys Ser Gly Thr Asp Leu Pro Pro Asn Leu
 145 150 155 160

His Lys Lys Ala Glu Ala Phe Gly Ile Asp Ile Leu Lys Ser Ile Asp
 165 170 175
 Leu Thr Leu Phe Pro Glu Phe Glu Glu Ile Leu Leu Gln Asn Cys Pro
 180 185 190
 Leu Tyr Trp Leu Ser His Phe Ile Asp Lys Thr Glu Ser Val Ala Gly
 195 200 205
 Glu Ile Gly Leu Asn Lys Thr Gln Lys Val Tyr Gly Leu Leu Gly Pro
 210 215 220
 Leu Ala Phe His Lys Gly Tyr Thr Thr Ile Phe His Ser Tyr Thr Arg
 225 230 235 240
 Pro Leu Leu Thr Leu Ile Ser Glu Ser Gln Tyr Lys Phe Leu Tyr Ser
 245 250 255
 Lys Ala Ser Lys Asn Gln Trp Asp Ser Pro Ser Val Lys Lys Thr Cys
 260 265 270
 Glu Glu Ile Phe Lys Glu Leu Pro His Asn Met Ile Phe Arg Lys Asp
 275 280 285
 Val Gln Gly Ile Ser Gln Phe Leu Phe Leu Phe Phe Ser His Gly Ile
 290 295 300
 Thr Trp Glu Gln Ala Gln Met Ile Gln Leu Ile Asn Pro Asp Asn Trp
 305 310 315 320
 Lys Met Leu Cys Gln Phe Asp Lys Ala Gly Gly His Cys Ser Met Ala
 325 330 335
 Thr Phe Gly Gly Phe Leu Asn Thr Glu Thr Asn Met Phe Asp Pro Val
 340 345 350
 Ser Ser Asn Tyr Glu Pro Thr Val Asn Phe Met Thr Trp Lys Glu Leu
 355 360 365
 Lys Val Leu Leu Glu Lys Val Lys Glu Ser Pro Met His Pro Ala Ser
 370 375 380
 Ala Leu Val Gln Lys Ile Cys Val Asn Thr Thr His His Gln Asn Leu
 385 390 395 400
 Leu Lys Arg Trp Gln Phe Val Arg Asn Thr Ser Ser Gln Trp Thr Ser
 405 410 415
 Ser Leu Pro Gln Tyr Ala Phe His Ala Gln Thr Tyr Lys Leu Glu Lys
 420 425 430
 Lys Asn Arg Lys Gln Ser Pro Tyr Thr Ile Phe Pro Ile Arg Gly Val
 435 440 445

<210>371

<211>365

<212>PRT

<213>Chlamydia pneumoniae

<400>371

Ile Lys Glu Phe Asn His Tyr Ser Tyr Cys Tyr Gln Cys His Leu Thr
 1 5 10 15
 Leu Arg Thr Leu Ile Ala Phe Leu Cys Val Ala Ala Pro Val Ser Tyr
 20 25 30
 Ile Leu Ser Gly Ala Leu Leu Gly Leu Gly Leu Leu Ile Ala Leu Ile
 35 40 45
 Gly Val Ile Leu Gly Ile Lys Lys Ile Thr Pro Met Ile Ser Ser Lys
 50 55 60
 Glu Gln Val Phe Pro Gln Glu Leu Val Asn Arg Ile Arg Ala His Tyr
 65 70 75 80
 Pro Lys Phe Val Ser Asp Phe Val Ser Glu Ala Lys Pro Asn Leu Lys
 85 90 95
 Asp Leu Ile Ser Phe Ile Asp Leu Leu Asn Gln Leu His Ser Glu Val
 100 105 110
 Gly Ser Ser Thr Asn Tyr Asn Val Ser Glu Glu Leu Gln Gln Lys Ile
 115 120 125
 Asp Thr Phe Glu Gly Ile Ala Arg Leu Lys Asn Glu Val Arg Thr Ala
 130 135 140
 Ser Leu Lys Arg Leu Glu Ser Ala Ala Ser Ser Arg Pro Leu Phe Pro
 145 150 155 160
 Ser Leu Pro Lys Ile Leu Gln Lys Val Phe Pro Phe Phe Trp Leu Gly
 165 170 175
 Glu Phe Ile Ser Ala Gly Ser Lys Val Val Glu Leu His Arg Val Lys

180 185 190
 Lys Ile Gly Gly Ser Leu Glu Glu Asp Leu Ser Asp Tyr Ile Lys Pro
 195 200 205
 Glu Met Leu Pro Thr Tyr Trp Leu Ile Pro Leu Asp Phe Arg Pro Thr
 210 215 220
 Asn Ser Ser Ile Leu Asn Leu His Thr Leu Val Leu Ala Arg Val Leu
 225 230 235 240
 Thr Arg Asp Val Phe Gln His Leu Lys Tyr Ala Ala Leu Asn Gly Glu
 245 250 255
 Trp Asn Leu Asn His Ser Asp Leu Asn Thr Met Lys Gln Gln Leu Phe
 260 265 270
 Ala Lys Tyr His Ala Ala Tyr Gln Ser Tyr Lys His Leu Ser Gln Pro
 275 280 285
 Ser Leu Gln Glu Asp Glu Phe Tyr Asn Leu Leu Leu Cys Ile Phe Lys
 290 295 300
 His Arg Tyr Ser Trp Lys Gln Met Ser Leu Ile Lys Thr Val Pro Ala
 305 310 315 320
 Asp Leu Trp Glu Asn Leu Cys Cys Leu Thr Leu Asp His Thr Gly Arg
 325 330 335
 Pro Gln Asp Met Glu Phe Ala Ser Leu Ile Gly Thr Leu Tyr Thr Gln
 340 345 350
 Gly Leu Ile His Lys Glu Ser Glu His Phe Phe Leu His
 355 360 365
 <210>372
 <211>455
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>372
 Ile Arg Asp Phe Tyr Leu His Ile Ile Tyr Thr Ala Phe Asn Arg Ser
 1 5 10 15
 Ile Ser Lys Glu Leu Ala Met Ser Met Thr Ile Val Pro His Ala Leu
 20 25 30
 Phe Lys Asn His Cys Glu Cys His Ser Thr Phe Pro Leu Ser Ser Arg
 35 40 45
 Thr Ile Val Arg Ile Ala Ile Ala Ser Leu Phe Cys Ile Gly Ala Leu
 50 55 60
 Ala Ala Leu Gly Cys Leu Ala Pro Pro Val Ser Tyr Ile Val Gly Ser
 65 70 75 80
 Val Leu Ala Phe Ile Ala Phe Val Ile Leu Ser Leu Val Ile Leu Ala
 85 90 95
 Leu Ile Phe Gly Glu Lys Lys Leu Pro Pro Thr Pro Arg Ile Ile Pro
 100 105 110
 Asp Arg Phe Thr His Val Ile Asp Glu Ala Tyr Gly Leu Ser Ile Ser
 115 120 125
 Ala Phe Val Arg Glu Gln Gln Val Thr Leu Ala Glu Phe Arg Gln Phe
 130 135 140
 Ser Thr Ala Leu Leu Cys Asn Ile Ser Pro Glu Glu Lys Ile Lys Gln
 145 150 155 160
 Leu Pro Ser Glu Leu Arg Ser Lys Val Glu Ser Phe Gly Ile Ser Arg
 165 170 175
 Leu Ala Gly Asp Leu Glu Lys Asn Asn Trp Pro Ile Phe Glu Asp Leu
 180 185 190
 Leu Ser Gln Thr Cys Pro Leu Tyr Trp Leu Gln Lys Phe Ile Ser Ala
 195 200 205
 Gly Asp Pro Gln Val Cys Arg Asp Leu Gly Val Pro Arg Glu Cys Tyr
 210 215 220
 Gly Tyr Tyr Trp Leu Gly Pro Leu Gly Tyr Ser Thr Ala Lys Ala Thr
 225 230 235 240
 Ile Phe Cys Lys Glu Thr His His Ile Leu Gln Gln Leu Thr Lys Glu
 245 250 255
 Asp Val Leu Leu Leu Lys Asn Lys Ala Leu Gln Glu Lys Trp Asp Thr
 260 265 270
 Asp Glu Val Lys Ala Ile Val Glu Arg Ile Tyr Thr Thr Tyr Thr Ala
 275 280 285

Arg Gly Thr Leu Lys Thr Glu Ala Gly Gly Leu Thr Lys Glu Thr Ile
 290 295 300
 Ser Lys Glu Leu Leu Leu Ser Leu His Gly Tyr Ser Phe Asp Gln
 305 310 315 320
 Leu Gln Leu Ile Thr Gln Leu Pro Arg Asp Ala Trp Asp Trp Leu Cys
 325 330 335
 Phe Val Asp Asn Ser Thr Ala Tyr Asn Leu Gln Leu Cys Ala Leu Val
 340 345 350
 Gly Ala Leu Ser Ser Gln Asn Leu Leu Asp Glu Ser Ser Ile Asp Phe
 355 360 365
 Asp Val Asn Leu Gly Leu Tyr Val Ile Gln Asp Leu Lys Glu Ala Val
 370 375 380
 Gln Ala Phe Ser Ala Ser Asp Glu Pro Lys Lys Glu Leu Gly Lys Phe
 385 390 395 400
 Leu Leu Arg His Leu Ser Ser Val Ser Lys Arg Leu Glu Ser Val Leu
 405 410 415
 Arg Gln Gly Leu His Arg Ile Ala Leu Glu His Gly Asn Ala Arg Ala
 420 425 430
 Arg Val Tyr Asp Val Asn Phe Val Thr Gly Ala Arg Ile His Arg Lys
 435 440 445
 Thr Ser Ile Phe Phe Lys Asp
 450 455
 <210>373
 <211>291
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>373
 Tyr Ser Ser His Asn Gly Ala Ser Met Val Asn Ile Gln Pro Val Tyr
 1 5 10 15
 Arg Asn Thr Gln Val Asn Tyr Ser Gln Ala Thr Gln Phe Ser Val Cys
 20 25 30
 Gln Pro Ala Leu Ser Leu Ile Ile Val Ser Val Val Ala Ala Val Leu
 35 40 45
 Ala Ile Val Ala Leu Val Cys Ser Gln Ser Leu Leu Ser Ile Glu Leu
 50 55 60
 Gly Thr Ala Leu Val Leu Val Ser Leu Ile Leu Phe Ala Ser Ala Met
 65 70 75 80
 Phe Met Ile Tyr Lys Met Arg Gln Glu Pro Lys Glu Leu Leu Ile Pro
 85 90 95
 Lys Lys Ile Met Glu Leu Ile Gln Glu His Tyr Pro Ser Ile Val Val
 100 105 110
 Asp Phe Ile Arg Asp Gln Glu Val Ser Ile Tyr Glu Ile His His Leu
 115 120 125
 Ile Ser Ile Leu Asn Lys Thr Asn Val Phe Asp Lys Ala Pro Val Tyr
 130 135 140
 Leu Gln Glu Lys Leu Leu Gln Phe Gly Ile Glu Lys Phe Lys Asp Val
 145 150 155 160
 His Pro Ser Lys Leu Pro Asn Phe Glu Glu Ile Leu Leu Gln His Cys
 165 170 175
 Pro Leu His Trp Leu Gly Arg Leu Val Tyr Pro Met Val Ser Asp Val
 180 185 190
 Thr Pro Gly Thr Tyr Gly Tyr Tyr Trp Cys Gly Pro Leu Gly Leu Tyr
 195 200 205
 Glu Asn Ala Pro Ser Leu Phe Glu Arg Arg Ser Leu Leu Leu Leu Lys
 210 215 220
 Lys Ile Ser Phe Gly Glu Phe Ala Leu Leu Glu Asp Gly Leu Lys Lys
 225 230 235 240
 Asn Thr Trp Ser Ser Ser Glu Leu Val Gln Ile Arg Gln Asn Leu Phe
 245 250 255
 Thr Arg Tyr Tyr Ala Asp Lys Glu Glu Val Asp Glu Ala Glu Leu Asn
 260 265 270
 Ala Asp Tyr Glu Gln Phe Asp Ser Leu Leu His Leu Ile Phe Ser His
 275 280 285
 Lys Leu Ser

290
 <210>374
 <211>607
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>374
 Thr Leu Gln Tyr Ile Leu Lys Glu Tyr Lys Ile Glu Asn Ile Arg Asn
 1 5 10 15
 Phe Ser Ile Ile Ala His Ile Asp His Gly Lys Ser Thr Ile Ala Asp
 20 25 30
 Arg Leu Leu Glu Ser Thr Ser Thr Val Glu Glu Arg Glu Met Arg Glu
 35 40 45
 Gln Leu Leu Asp Ser Met Asp Leu Glu Arg Glu Arg Gly Ile Thr Ile
 50 55 60
 Lys Ala His Pro Val Thr Met Thr Tyr Leu Tyr Glu Gly Glu Val Tyr
 65 70 75 80
 Gln Leu Asn Leu Ile Asp Thr Pro Gly His Val Asp Phe Ser Tyr Glu
 85 90 95
 Val Ser Arg Ser Leu Ser Ala Cys Glu Gly Ala Leu Leu Ile Val Asp
 100 105 110
 Ala Ala Gln Gly Val Gln Ala Gln Ser Leu Ala Asn Val Tyr Leu Ala
 115 120 125
 Leu Glu Arg Asp Leu Glu Ile Ile Pro Val Leu Asn Lys Ile Asp Leu
 130 135 140
 Pro Ala Ala Asp Pro Val Arg Ile Ala Gln Gln Ile Glu Asp Tyr Ile
 145 150 155 160
 Gly Leu Asp Thr Thr Asn Ile Ile Ala Cys Ser Ala Lys Thr Gly Gln
 165 170 175
 Gly Ile Pro Ala Ile Leu Lys Ala Ile Ile Asp Leu Val Pro Pro Pro
 180 185 190
 Lys Ala Pro Ala Glu Thr Glu Leu Lys Ala Leu Val Phe Asp Ser His
 195 200 205
 Tyr Asp Pro Tyr Val Gly Ile Met Val Tyr Val Arg Ile Ile Ser Gly
 210 215 220
 Glu Leu Lys Lys Gly Asp Arg Ile Thr Phe Met Ala Ala Lys Gly Ser
 225 230 235 240
 Ser Phe Glu Val Leu Gly Ile Gly Ala Phe Leu Pro Lys Ala Thr Phe
 245 250 255
 Ile Glu Gly Ser Leu Arg Pro Gly Gln Val Gly Phe Phe Ile Ala Asn
 260 265 270
 Leu Lys Lys Val Lys Asp Val Lys Ile Gly Asp Thr Val Thr Lys Thr
 275 280 285
 Lys His Pro Ala Lys Thr Pro Leu Glu Gly Phe Lys Glu Ile Asn Pro
 290 295 300
 Val Val Phe Ala Gly Ile Tyr Pro Ile Asp Ser Ser Asp Phe Asp Thr
 305 310 315 320
 Leu Lys Asp Ala Leu Gly Arg Leu Gln Leu Asn Asp Ser Ala Leu Thr
 325 330 335
 Ile Glu Gln Glu Ser Ser His Ser Leu Gly Phe Gly Phe Arg Cys Gly
 340 345 350
 Phe Leu Gly Leu Leu His Leu Glu Ile Ile Phe Glu Arg Ile Ile Arg
 355 360 365
 Glu Phe Asp Leu Asp Ile Ile Ala Thr Ala Pro Ser Val Ile Tyr Lys
 370 375 380
 Val Val Leu Lys Asn Gly Lys Val Leu Asp Ile Asp Asn Pro Ser Gly
 385 390 395 400
 Tyr Pro Asp Pro Ala Ile Ile Glu His Val Glu Glu Pro Trp Val His
 405 410 415
 Val Asn Ile Ile Thr Pro Gln Glu Tyr Leu Ser Asn Ile Met Asn Leu
 420 425 430
 Cys Leu Asp Lys Arg Gly Ile Cys Val Lys Thr Glu Met Leu Asp Gln
 435 440 445
 His Arg Leu Val Leu Ala Tyr Glu Leu Pro Leu Asn Glu Ile Val Ser
 450 455 460

Asp Phe Asn Asp Lys Leu Lys Ser Val Thr Lys Gly Tyr Gly Ser Phe
 465 470 475 480
 Asp Tyr Arg Leu Gly Asp Tyr Arg Lys Gly Ser Ile Ile Lys Leu Glu
 485 490 495
 Val Leu Ile Asn Glu Glu Pro Ile Asp Ala Phe Ser Cys Leu Val His
 500 505 510
 Arg Asp Lys Ala Glu Ser Arg Gly Arg Ser Ile Cys Glu Lys Leu Val
 515 520 525
 Asp Val Ile Pro Gln Gln Leu Phe Lys Ile Pro Ile Gln Ala Ala Ile
 530 535 540
 Asn Lys Lys Val Ile Ala Arg Glu Thr Ile Arg Ala Leu Ser Lys Asn
 545 550 555 560
 Val Thr Ala Lys Cys Tyr Gly Gly Asp Ile Thr Arg Lys Arg Lys Leu
 565 570 575
 Trp Glu Lys Gln Lys Lys Gly Lys Lys Arg Met Lys Glu Phe Gly Lys
 580 585 590
 Val Ser Ile Pro Asn Thr Ala Phe Ile Glu Val Leu Lys Leu Asp
 595 600 605
 <210>375
 <211>332
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>375
 Gly Val Ala Ile Ser Gly Ser Tyr Phe Ser Ile Asn Ser Ser Lys Ser
 1 5 10 15
 Thr Gly Pro Ser Leu Leu Phe Leu Gly Arg Asn Trp Arg Cys Arg Pro
 20 25 30
 Leu Cys Lys Gly Cys Ser Gln Trp Tyr Arg Ile Arg Arg Tyr Pro Val
 35 40 45
 Asp Met Arg Thr Tyr Gly Ile Leu Arg Asp Phe Leu Lys Leu Ser Ala
 50 55 60
 Thr Ala Val Ala Thr Ile Leu Lys Glu Trp Asn Thr Leu Glu Leu Glu
 65 70 75 80
 Ser Tyr Leu Ile Arg Ile Ala Ser Glu Val Leu Ala Leu Lys Asp Pro
 85 90 95
 Glu Gly Ile Pro Val Ile Asp Thr Ile Leu Asp Val Val Gly Gln Lys
 100 105 110
 Gly Thr Gly Lys Trp Thr Ala Ile Asp Ala Leu Asn Ser Gly Val Pro
 115 120 125
 Leu Ser Leu Ile Ile Gly Ala Val Leu Ala Arg Phe Leu Ser Ser Trp
 130 135 140
 Lys Glu Ile Arg Glu Gln Ala Ala Arg Asn Tyr Pro Gly Thr Pro Leu
 145 150 155 160
 Ile Phe Glu Met Pro His Asp Pro Ser Val Phe Ile Gln Asp Val Phe
 165 170 175
 His Ala Leu Tyr Ala Ser Lys Ile Ile Ser Tyr Ala Gln Gly Phe Met
 180 185 190
 Leu Leu Gly Glu Ala Ser Lys Glu Tyr Asn Trp Gly Leu Asp Leu Gly
 195 200 205
 Glu Ile Ala Leu Met Trp Arg Gly Gly Cys Ile Ile Gln Ser Ala Phe
 210 215 220
 Leu Asp Val Ile His Lys Gly Phe Ala Ala Asn Pro Glu Asn Thr Ser
 225 230 235 240
 Leu Ile Phe Gln Glu Tyr Phe Arg Gly Ala Leu Arg His Ala Glu Met
 245 250 255
 Gly Trp Arg Arg Thr Val Val Thr Ala Ile Gly Ala Gly Leu Pro Ile
 260 265 270
 Pro Cys Leu Ala Ala Ala Ile Thr Phe Tyr Asp Gly Tyr Arg Thr Ala
 275 280 285
 Ser Ser Ser Met Ser Leu Ala Gln Gly Leu Arg Asp Tyr Phe Gly Ala
 290 295 300
 His Thr Tyr Glu Arg Asn Asp Arg Pro Arg Gly Glu Phe Tyr His Thr
 305 310 315 320
 Asp Trp Val His Thr Lys Thr Thr Glu Arg Val Lys

325

330

<210>376

<211>204

<212>PRT

<213>Chlamydia pneumoniae

<400>376

Val Ala Leu Gln Thr Asn Ile Gly Leu Ile Gly Leu Ala Val Met Gly
 1 5 10 15
 Lys Asn Leu Val Leu Asn Met Ile Asp His Gly Phe Ser Val Ser Val
 20 25 30
 Tyr Asn Arg Thr Pro Glu Lys Thr Arg Asp Phe Leu Lys Glu Tyr Pro
 35 40 45
 Asn His Arg Glu Leu Val Gly Phe Glu Ser Leu Glu Asp Phe Val Asn
 50 55 60
 Ser Leu Glu Arg Pro Arg Lys Ile Met Leu Met Ile Gln Ala Gly Lys
 65 70 75 80
 Pro Val Asp Gln Ser Ile His Ala Leu Leu Pro Phe Leu Glu Pro Gly
 85 90 95
 Asp Val Ile Ile Asp Gly Gly Asn Ser Tyr Phe Lys Asp Ser Glu Arg
 100 105 110
 Arg Cys Lys Glu Leu Gln Glu Lys Gly Ile Leu Phe Leu Gly Val Gly
 115 120 125
 Ile Ser Gly Gly Glu Glu Gly Ala Arg His Gly Pro Ser Ile Met Pro
 130 135 140
 Gly Gly Asn Pro Glu Ala Trp Pro Leu Val Ala Pro Ile Phe Gln Ser
 145 150 155 160
 Ile Ala Ala Lys Val Gln Gly Arg Pro Cys Cys Ser Trp Val Gly Thr
 165 170 175
 Gly Gly Ala Gly His Tyr Val Lys Ala Val His Asn Gly Ile Glu Tyr
 180 185 190
 Gly Asp Ile Gln Leu Ile Cys Glu Leu Thr Val Ser
 195 200

<210>377

<211>422

<212>PRT

<213>Chlamydia pneumoniae

<400>377

Leu Ala Ile Leu Asn Tyr Val Arg Ser Leu Met Gln Ser Trp Leu Gln
 1 5 10 15
 Ser Leu Gln Glu Arg Asn Ile Leu Glu Asn Phe Thr Ala Gly Leu Glu
 20 25 30
 Ser Val Glu Gly Pro Ile Ala Ala Tyr Leu Gly Phe Asp Pro Thr Ala
 35 40 45
 Pro Ala Leu His Ile Gly His Trp Ile Gly Ile Cys Phe Leu Lys Arg
 50 55 60
 Leu Ala Ala Leu Gly Ile Thr Pro Ile Ala Leu Val Gly Gly Ala Thr
 65 70 75 80
 Gly Met Val Gly Asp Pro Ser Gly Lys Gln Ser Glu Arg Ser Leu Leu
 85 90 95
 Gln Thr Ser Glu Val Phe Asp Asn Ser Gln Lys Ile Thr Ala Cys Leu
 100 105 110
 Gln Arg Tyr Leu Pro Gly Val Thr Leu Val Asn Asn Ala Asp Trp Leu
 115 120 125
 Gln Glu Ile Ser Leu Ile Asp Phe Leu Arg Asp Ile Gly Lys His Phe
 130 135 140
 Arg Leu Gly Gln Met Leu Val Lys Asp Thr Ile Lys Gln Arg Val His
 145 150 155 160
 Ser Asp Glu Gly Ile Ser Tyr Thr Glu Phe Ser Tyr Leu Ile Leu Gln
 165 170 175
 Ser Tyr Asp Phe Tyr His Leu Phe Lys Asn Tyr Gly Thr Ile Leu Gln
 180 185 190
 Cys Gly Gly Ser Asp Gln Trp Gly Asn Ile Thr Ser Gly Ile Asp Phe
 195 200 205
 Ile Arg Arg Lys Gly Leu Gly Gln Ala Tyr Gly Leu Thr Tyr Pro Leu

210 215 220
 Leu Thr Asn Ala Gln Gly Lys Lys Ile Gly Lys Thr Glu Ser Gly Thr
 225 230 235 240
 Val Trp Leu Asp Ser Asp Leu Thr Ser Pro Phe Glu Leu Tyr Gln Tyr
 245 250 255
 Leu Leu Arg Leu Pro Asp Asp Thr Ile Pro Lys Ile Ala Arg Thr Leu
 260 265 270
 Thr Leu Leu Ser Asn Glu Glu Ile Gln Asp Ile Asp Arg Arg Val Gln
 275 280 285
 Thr Asp Pro Val Ala Val Lys Glu Phe Val Ala Gln Asp Ile Leu Ser
 290 295 300
 Ala Ile His Gly Asp Leu Gly Leu Glu Glu Ala Leu Ser Val Thr Arg
 305 310 315 320
 Ser Met His Pro Gly Asn Leu Ser Ser Leu Ser Glu Lys Asp Phe His
 325 330 335
 Glu Leu Phe Ala Gly Gly Met Gly Ala Ser Leu Asp Lys Ser Glu Val
 340 345 350
 Leu Gly Lys Arg Trp Leu Asp Leu Phe Leu Val Leu Gly Leu Cys Lys
 355 360 365
 Ser Lys Gly Glu Ile Arg Arg Leu Ile Glu Gln Lys Gly Val Tyr Ile
 370 375 380
 Asn Asn Val Pro Ile Ala Asn Glu His Ser Val Cys Glu Glu Gln Asp
 385 390 395 400
 Ile Cys Tyr Gly His Tyr Val Leu Leu Ala Gln Gly Lys Lys Arg Lys
 405 410 415
 Leu Val Leu Tyr Leu Asn
 420

<210>378

<211>103

<212>PRT

<213>Chlamydia pneumoniae

<400>378

Val Ala Met Ser Thr Ser Pro Ile Gly Val Pro Ser Met Leu Asn Ala
 1 5 10 15
 Ala Thr Ser Leu Asn Ala Thr Thr Ser Lys Ala Pro Leu Pro Thr Ser
 20 25 30
 Thr Leu Ala Glu Arg Ile Lys Glu Trp Leu Pro Arg Ile Leu Leu Leu
 35 40 45
 Ile Val Gly Ala Ile Phe Thr Ile Ala Gly Cys Ile Val Met Ala Leu
 50 55 60
 Thr Lys Gln Ile Leu Tyr Gly Leu Leu Cys Val Val Gly Gly Leu Leu
 65 70 75 80
 Leu Ala Leu Gly Leu Leu Leu Lys Pro Glu Asn Cys Ile Tyr Arg Asn
 85 90 95
 Ala Glu Ser Leu Arg Glu Ala
 100

<210>379

<211>291

<212>PRT

<213>Chlamydia pneumoniae

<400>379

Leu Asp Lys Lys Lys Phe Val Lys Thr Gln Gln Thr Gln Asn Ile Ile
 1 5 10 15
 Glu Val Trp Asn Phe Tyr Trp Glu Thr Gln Glu Ile Glu Tyr Arg Asp
 20 25 30
 Ser Leu Ile Glu Phe Tyr Leu Pro Leu Val Lys Ser Val Val His Arg
 35 40 45
 Leu Ile Ser Gly Met Pro Ser His Val Lys Thr Glu Asp Leu Tyr Ala
 50 55 60
 Ser Gly Val Glu Gly Leu Val Arg Ala Val Glu Arg Tyr Asn Pro Glu
 65 70 75 80
 Arg Ser Arg Arg Phe Glu Gly Tyr Ala Val Phe Leu Ile Lys Ala Ala
 85 90 95
 Ile Ile Asp Asp Leu Arg Lys Gln Asp Trp Val Pro Arg Ser Val His

100 105 110
 Gln Lys Ala Asn Lys Leu Ser Gly Ala Met Asp Ser Leu Arg Gln Ser
 115 120 125
 Leu Gly Lys Glu Pro Thr Asp Leu Glu Leu Cys Glu Tyr Leu Asn Ile
 130 135 140
 Ser Gln Gln Glu Leu Ser Gly Trp Phe Val Ser Ala Arg Pro Ala Leu
 145 150 155 160
 Ile Val Ser Leu Asn Glu Glu Trp Pro Ser Gln Ser Asp Glu Gly Ala
 165 170 175
 Gly Met Ala Leu Glu Glu Arg Ile Pro Asp Glu Arg Ala Glu Thr Gly
 180 185 190
 Tyr Asp Val Val Asp Lys Gln Glu Phe Ser Leu Cys Leu Ala Asn Ala
 195 200 205
 Ile Gln Glu Leu Glu Glu Lys Glu Arg Lys Val Met Ala Leu Tyr Tyr
 210 215 220
 Tyr Glu Glu Leu Val Leu Lys Glu Ile Gly Lys Val Leu Gly Val Ser
 225 230 235 240
 Glu Ser Arg Val Ser Gln Ile His Ser Lys Ala Leu Leu Lys Leu Arg
 245 250 255
 Ala Asp Ser Leu His Phe Asp Lys Tyr Ser Ser Gln Val Leu Arg Ala
 260 265 270
 Val Leu Glu Leu Gly Glu Ala Leu Leu Arg His Arg Val Ile Arg Lys
 275 280 285
 Glu Phe Val
 290
 <210>380
 <211>544
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>380
 Phe Cys Ile Val Phe Thr Asn Gly Leu Leu Gly Leu Tyr Leu Lys Phe
 1 5 10 15
 Lys Gln Phe Ser Glu Val Phe Pro Pro Phe Phe Leu Tyr Leu Cys Leu
 20 25 30
 Leu Arg Leu Gly Leu Asn Leu Ala Ser Thr Arg Trp Ile Val Ser Ser
 35 40 45
 Gly Thr Ala Ser Ser Leu Ile Val Ser Leu Gly Ser Phe Phe Ser Leu
 50 55 60
 Gly Ser Leu Trp Ala Ala Thr Phe Ala Cys Leu Leu Leu Phe Phe Val
 65 70 75 80
 Asn Phe Leu Met Val Ser Lys Gly Ser Glu Arg Ile Ala Glu Val Arg
 85 90 95
 Ser Arg Phe Phe Leu Glu Ala Leu Pro Ala Lys Gln Met Ala Leu Asp
 100 105 110
 Ser Asp Leu Val Ser Gly Arg Ala Ser Tyr Lys Ala Val Lys Lys Gln
 115 120 125
 Lys Asn Ala Leu Ile Glu Glu Gly Asp Phe Phe Ser Ala Met Glu Gly
 130 135 140
 Val Phe Arg Phe Val Lys Gly Asp Ala Ile Ile Ser Cys Ile Leu Leu
 145 150 155 160
 Leu Val Asn Val Val Ser Val Thr Cys Leu Tyr Tyr Thr Ser Gly Tyr
 165 170 175
 Ala Leu Glu Gln Met Trp Phe Thr Val Leu Gly Asp Ala Leu Val Ser
 180 185 190
 Gln Val Pro Ala Leu Leu Thr Ser Cys Ala Ala Ala Thr Leu Ile Ser
 195 200 205
 Lys Ile Asp Lys Glu Glu Ser Leu Leu Asn Tyr Leu Phe Glu Tyr Tyr
 210 215 220
 Lys Gln Leu Arg Gln His Phe Arg Val Val Ser Leu Leu Ile Phe Ser
 225 230 235 240
 Leu Cys Cys Ile Pro Ser Ser Pro Lys Phe Pro Ile Val Leu Leu Ala
 245 250 255
 Ser Leu Leu Trp Leu Ala Tyr Arg Lys Glu Glu Pro Ala Ser Glu Asp
 260 265 270

Ser Cys Ile Glu Arg Ala Phe Ser Tyr Val Glu Gly Ala Cys Pro Lys
 275 280 285
 Glu Gln Glu Ser Gln Phe Tyr Gln Val Tyr Arg Ala Ala Ser Glu Glu
 290 295 300
 Val Phe Glu Asp Leu Gly Val Arg Leu Pro Val Leu Thr Ser Leu Arg
 305 310 315 320
 Ile Glu Glu Arg Pro Trp Leu Arg Val Phe Gly Gln Asn Val Tyr Leu
 325 330 335
 Asp Glu Met Thr Pro Glu Ala Val Leu Pro Phe Leu Arg Asn Ile Ala
 340 345 350
 His Glu Ala Leu Asn Ala Glu Val Val Gln Lys Tyr Leu Glu Glu Ser
 355 360 365
 Glu Arg Val Phe Gly Ile Ala Val Glu Asp Ile Val Pro Lys Lys Ile
 370 375 380
 Ser Leu Ser Ser Leu Val Val Leu Ser Arg Leu Leu Val Arg Glu Arg
 385 390 395 400
 Val Ser Leu Lys Leu Xaa Pro Lys Ile Leu Glu Ala Val Ala Val Tyr
 405 410 415
 Gln Asn Ser Gly Asp Ser Leu Glu Ile Leu Ala Glu Lys Val Arg Lys
 420 425 430
 Ser Leu Gly Tyr Trp Ile Gly Arg Ser Leu Trp Asp Gln Lys Gln Thr
 435 440 445
 Leu Glu Val Ile Thr Ile Asp Phe His Val Glu Glu Leu Ile Asn Ser
 450 455 460
 Ser Tyr Ser Lys Ser Asn Pro Val Met Gln Glu Asn Val Ile Arg Arg
 465 470 475 480
 Val Asp Ser Leu Leu Glu Arg Ser Val Phe Lys Asp Phe Arg Ala Ile
 485 490 495
 Val Thr Ser Cys Glu Thr Arg Phe Glu Met Lys Lys Met Leu Asp Pro
 500 505 510
 His Phe Pro Asp Leu Leu Val Leu Ser His Asp Glu Leu Pro Lys Glu
 515 520 525
 Ile Pro Ile Ser Phe Leu Gly Ile Val Ser Asp Glu Val Leu Val Pro
 530 535 540

<210>381

<211>91

<212>PRT

<213>Chlamydia pneumoniae

<400>391

Met Ala Lys Leu Val Ile Thr Ser Asp Asp Glu Gln Gln Glu Phe Glu
 1 5 10 15
 Leu Glu Asp Asn Ser Glu Ile Ala Glu Pro Cys Glu Ser Met Gly Ile
 20 25 30
 Pro Phe Ala Cys Thr Glu Gly Val Cys Gly Thr Cys Val Ile Glu Val
 35 40 45
 Leu Glu Gly Arg Glu Asn Leu Ser Glu Phe Thr Glu Pro Glu Tyr Asp
 50 55 60
 Phe Leu Gly Glu Pro Glu Asp Ser Asn Glu Arg Leu Ala Cys Gln Cys
 65 70 75 80
 Arg Ile Lys Gly Gly Cys Val Lys Val Thr Phe
 85 90

<210>382

<211>191

<212>PRT

<213>Chlamydia pneumoniae

<400>382

Phe Lys Gly Thr Gln Val Asn Ser Leu Ile Met Ala Thr Ile Ser Pro
 1 5 10 15
 Ile Ser Leu Thr Val Asp His Pro Leu Val Asp Thr Lys Lys Ser
 20 25 30
 Cys Ser Asn Phe Asp Lys Ile Gln Ser Arg Ile Leu Leu Ile Thr Ala
 35 40 45
 Ile Phe Ala Val Leu Val Thr Ile Gly Thr Leu Leu Ile Gly Leu Leu
 50 55 60

Leu Asn Ile Pro Val Ile Tyr Phe Leu Thr Gly Ile Ser Phe Ile Ala
 65 70 75 80
 Val Val Leu Ser Asn Phe Ile Leu Tyr Lys Arg Ala Thr Thr Leu Leu
 85 90 95
 Lys Pro Arg Ala Cys Gly Lys His Lys Glu Ile Lys Pro Lys Arg Val
 100 105 110
 Ser Thr Asn Leu Gln Tyr Ser Ser Ile Ser Ile Ala Ile Asn Arg Ser
 115 120 125
 Lys Glu Asn Trp Glu His Gln Pro Lys Asp Leu Gln Asn Leu Pro Ala
 130 135 140
 Pro Ser Ala Leu Leu Thr Asp Asn Pro Tyr Glu Ile Trp Lys Ala Lys
 145 150 155 160
 His Ser Leu Phe Ser Leu Val Ser Leu Leu Pro Gly Gly Asn Pro Lys
 165 170 175
 Thr Ser Leu Lys Phe Lys Leu Pro Lys Ile Tyr Glu Arg Leu Cys
 180 185 190

<210>383

<211>158

<212>PRT

<213>Chlamydia pneumoniae

<400>383

Leu Lys Lys Pro Arg Lys Met Arg Leu Tyr Pro Pro Tyr Val Asp Thr
 1 5 10 15
 Thr Pro Ser Pro Lys Ser Leu Leu Asn Glu Ala Ile Gln Glu Thr Arg
 20 25 30
 Val Glu Ile Asn Thr Glu Leu Pro Ala Gly Asp Ser Gly Glu Arg Leu
 35 40 45
 Tyr Trp Gln Pro Asp Phe Arg Gly Arg Val Phe Leu Pro Gln Ile Pro
 50 55 60
 Thr Thr Pro Glu Ala Ile Tyr Gln Tyr Tyr Tyr Ala Leu Tyr Val Thr
 65 70 75 80
 Tyr Ile Gln Thr Ala Ile Asn Thr Asn Thr Gln Ile Ile Gln Ile Pro
 85 90 95
 Leu Tyr Ser Leu Arg Glu His Leu Tyr Ser Arg Glu Leu Pro Pro Gln
 100 105 110
 Ser Arg Met Gln Gln Ser Leu Ala Met Ile Thr Ala Val Lys Tyr Met
 115 120 125
 Ala Glu Leu His Pro Glu Tyr Pro Leu Thr Ile Ala Cys Val Glu Arg
 130 135 140
 Ser Leu Ala Gln Leu Pro Gln Glu Ser Ile Glu Asp Leu Ser
 145 150 155

<210>384

<211>155

<212>PRT

<213>Chlamydia pneumoniae

<400>384

Met Gly Tyr Leu Pro Val Ser Ala Thr Asp Val Leu Phe Glu Ser Pro
 1 5 10 15
 Ala Ala Pro Leu Ile Asn Ser Ala Asn Thr Gln Asn Gln Lys Leu Ile
 20 25 30
 Glu Leu Lys Gly Lys Gln Gln Ala Glu Ser Ser Pro Arg Thr Ile Thr
 35 40 45
 Ser Val Ile Leu Glu Val Leu Leu Val Ile Gly Cys Cys Leu Ile Val
 50 55 60
 Leu Ser Leu Leu Ala Ile Arg Pro Ala Leu Gln Phe Thr Leu Glu Thr
 65 70 75 80
 Gly His Pro Ala Ala Ile Ala Val Leu Ala Val Ser Gly Thr Ile Leu
 85 90 95
 Leu Val Ala Val Ile Ile Leu Phe Cys Phe Leu Ala Ala Val Pro Phe
 100 105 110
 Ala Ala Lys Lys Thr Tyr Lys Tyr Val Lys Thr Val Asp Asp Tyr Ala
 115 120 125
 Ser Trp His Ser His Gln Gln Thr Pro Thr Leu Gly Thr Ile Phe Ser
 130 135 140

Gly Ile Val Tyr Ala Glu Ser Gln Ala Gln Leu
 145 150 155
 <210>385
 <211>253
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>385
 Ser Phe Pro Leu Asn Arg Tyr Phe Met Thr Lys Thr Thr Ser Ile Pro
 1 5 10 15
 Asp Val His Glu Asn Gln Ser His Leu Ser Val Asp Glu Arg Leu Ile
 20 25 30
 Ser Glu Ser Pro Val Leu Thr Lys Lys Glu Val Ile Ala Lys Ile Ile
 35 40 45
 Lys Leu Thr Ala Leu Ile Leu Ala Leu Ala Ile Ala Val Gly Thr Ala
 50 55 60
 Val Val Ala Gly Val Leu Gly Met Pro Leu Met Ala Ile Ala Thr Gly
 65 70 75 80
 Ala Ala Leu Leu Ala Ala Val Val Leu Ser Cys Leu Leu Leu Arg Arg
 85 90 95
 Arg Glu Pro Ser Lys Pro Thr Glu Glu Leu Leu Gly Pro Gln Lys His
 100 105 110
 Val Pro Lys Asp Ile Ala Ala Gln Val Gln Pro Ser Val Pro Leu Asp
 115 120 125
 Tyr Gln Lys Leu Leu Arg Asn Glu Trp Thr Leu Val Asn Thr Leu Ser
 130 135 140
 Glu Ile Asn Ile Ser Trp Thr Leu Gln Asp Pro Asn Gln Arg Tyr Tyr
 145 150 155 160
 Val Trp Glu His Gln Gly Ala Pro Ile Thr Leu Val Ala Thr Thr Gly
 165 170 175
 Asp Ile Ala Lys Pro Arg Leu Lys Thr Ser Gly Arg Val Met Ile Val
 180 185 190
 Asn Ala Ala Asn Ser Asn Met Gln Ser Gly Gly Ala Gly Thr Asn Ala
 195 200 205
 Ala Leu Ser Ala Ala Thr His Pro Thr Cys Trp Asn Asn Thr Arg Thr
 210 215 220
 Ser Gly Gly Lys Ile Asn Thr Gly Lys Gly Leu Ser Val Gly Glu Cys
 225 230 235 240
 Arg Ser Ala Pro Trp Ile Asn Arg Asp Trp Thr Asn Lys
 245 250

<210>386
 <211>114
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>386
 Thr Leu Ala Lys Asp Tyr Leu Trp Val Asn Ala Ala Gln His Pro Gly
 1 5 10 15
 Ser Ile Glu Thr Gly Arg Ile Asn Asp Thr Asn Pro Gly Glu Ala His
 20 25 30
 Phe Leu Ala Gln Leu Leu Gly Pro Lys Tyr Glu Gly Glu Leu Lys Ala
 35 40 45
 His Pro Glu Lys Leu Ser Asn Val Ile Lys Lys Ala Tyr Leu Asn Cys
 50 55 60
 Phe Asp Glu Ala Leu Asn Asn Gln Ala Thr Val Val Gln Val Pro Leu
 65 70 75 80
 Ile Ser Ser Ser Ile Tyr Ser Pro Gly Gly Lys Leu Glu Leu Glu Pro
 85 90 95
 Val Asn Gln Thr Lys Pro Asn Ser Ser Ala Tyr Lys Leu Tyr His Ile
 100 105 110
 Arg Thr

<210>387
 <211>406
 <212>PRT
 <213>Chlamydia pneumoniae

<400>387

Asn Ile Met Thr Asp Ser Asn Pro Leu Pro Ser Tyr Thr Asp Ala Ser
 1 5 10 15
 Leu Tyr Arg Thr Pro Ala Lys His Ser Tyr Pro Ile Arg Leu Pro Leu
 20 25 30
 Asn Arg Thr Asp Arg Ile Glu Lys Ile Leu Lys Ile Val Thr Leu Thr
 35 40 45
 Leu Ala Leu Ala Cys Ala Leu Gly Phe Ser Ile Ala Ala Gly Ile Leu
 50 55 60
 Ala Met Pro Ile Phe Ser Ala Val Val Val Ile Thr Leu Ala Ile Ala
 65 70 75 80
 Ala Val Ser Leu Tyr Ser Leu Leu Lys Lys Pro Lys Leu Tyr Glu Ile
 85 90 95
 Leu Pro Gln Ile Glu Pro Glu Ser Glu Gln Ser Ser Leu Ser Pro Ser
 100 105 110
 Pro Gln Pro Pro Glu Gln Gln Asp Leu Pro Leu Gln Ile Asp Pro Leu
 115 120 125
 Pro Asp Pro Glu Ser Leu Pro Glu Val Ser Leu Ala Asp Leu Thr Thr
 130 135 140
 Pro Pro Glu Glu Leu Thr Ala Ile Thr Val Thr Pro Gly Tyr Glu Ala
 145 150 155 160
 Leu Leu Glu Gln Asn Trp Asp Leu Leu Pro Ser Leu Ala Ala Val Asp
 165 170 175
 Pro Ser Phe Thr Thr Glu Thr Pro Gln Gln Pro Cys Phe Ile Trp Lys
 180 185 190
 Leu Lys Asp Ser Lys Leu Ile Phe Ile Ser Thr Ser Gly Asp Ile Ala
 195 200 205
 Val Pro Arg Ile Lys Thr Gln Gly Arg Val Met Ile Val Asn Ala Ala
 210 215 220
 Asn Glu Asn Ile Ser Arg Glu Gly Gly Gly Thr Asn Lys Ala Leu Ser
 225 230 235 240
 Leu Ala Thr Ser Leu Gln Cys Trp Asn Ala Ser Arg Leu Pro Arg Ala
 245 250 255
 His Ser Arg Ser Gly Ser Gln Leu Gln Pro Gly Glu Cys Arg Ser Ala
 260 265 270
 Lys Trp Glu Asn Ser Asp His Thr Ser Asn Asp His Val Pro Gly Lys
 275 280 285
 Ala His Phe Leu Ala Gln Leu Leu Gly Pro Glu Ala Ala Lys Cys Asn
 290 295 300
 Asn Asp Pro Lys Gln Ala Phe Glu Val Ser Lys Lys Ala Phe His Asn
 305 310 315 320
 Leu Phe Gln Glu Ala Glu Ile Ile Gly Val Asp Val Ile Gln Leu Pro
 325 330 335
 Leu Ile Gly Cys Asn Leu Phe Ala Pro Ser Arg Leu Leu Asn Leu Gly
 340 345 350
 Lys Thr Arg Ala Glu Trp Ile Glu Ala Ile Lys Leu Ala Leu Ile Thr
 355 360 365
 Ser Leu Gln Asp Phe Gly Trp Glu Gln Asp Asn Gln Glu Glu Gln Lys
 370 375 380
 Ile Ile Ile Leu Thr Asp Lys Asp Gln Pro Pro Ile Ile Pro Pro Arg
 385 390 395 400
 Phe Asp Leu Thr Thr Pro
 405

<210>388

<211>386

<212>PRT

<213>Chlamydia pneumoniae

<400>388

Lys Arg Ile Phe Phe Lys Leu Phe Val Phe Tyr Leu Lys Ser Phe Met
 1 5 10 15
 Ser Thr Thr Glu Pro Asn Leu Thr Asn Val Asn Leu Thr Met Leu Ile
 20 25 30
 Ser Ser Glu Ser Met Pro Thr Gln Leu Ala Ser His Lys Leu Lys Gly
 35 40 45

Leu Asp Leu Val Ala Phe Ile Leu Ile Ile Gly Ile Ala Val Ser Ser
 50 55 60
 Gly Thr Ala Ala Ile Ile Leu Gly Ile Pro Leu Phe Ile Leu Thr
 65 70 75 80
 Ala Leu Ala Val Leu Ala Phe Ser Ile Leu Leu Tyr Phe Leu Leu Arg
 85 90 95
 Glu Pro Lys Ser Pro Ile Ser Val Thr His Gln Pro Thr Pro Ile Ile
 100 105 110
 Lys Asp Thr Asp Leu Pro Pro Val Pro Pro Leu Ala Leu Thr Pro Val
 115 120 125
 Pro Thr Glu Ala Val Leu Glu Glu Pro Pro Leu Pro Ser Pro Arg Thr
 130 135 140
 His Gln Thr Leu Leu Gln Glu Asn Trp Asp Arg Ile Pro Asp Leu Gln
 145 150 155 160
 Ala Asn Thr Asp Met Pro Phe Ile Ala Ala Asp Asn Gln Thr Gly Tyr
 165 170 175
 Ala Trp His Leu Lys Asn Ser Asn Leu Thr Leu Ile Ser Thr Leu Gly
 180 185 190
 Pro Ile Glu Lys Pro Arg Tyr Lys Thr Gln Gly Ile Val Met Ile Val
 195 200 205
 Asn Ala Ala Thr Pro Asn Met Ala Asn Asn Val Lys Gly Thr Ser Leu
 210 215 220
 Ala Leu Ala Lys Ala Thr Ser Val Arg Cys Trp Glu Asn Ser Lys Lys
 225 230 235 240
 Ser Pro Asp Pro Leu Arg Ser Lys Gln Pro Leu Gln Leu Gly Glu Cys
 245 250 255
 Arg Ser Ala Lys Trp Glu Asn Leu Asn Gly Thr Thr Asn Ala Gly Lys
 260 265 270
 Ala Gly Leu Pro Gln Phe Leu Gly Gln Leu Leu Gly Pro Lys Ala Ser
 275 280 285
 Asp Tyr Asn Tyr Asn Pro Asn Asp Ala Phe Thr Phe Cys Arg Gln Ala
 290 295 300
 Tyr Leu Asn Cys Leu Asn Glu Ala Lys Arg Arg Lys Thr Thr Val Val
 305 310 315 320
 Gln Leu Pro Leu Leu Ser Ser His Phe Pro Gly Ser Pro Lys Asp Glu
 325 330 335
 Glu Thr Thr Ser Leu Arg Leu Gln Trp Ile Asp Gly Val Lys Leu Ala
 340 345 350
 Leu Ile Asp Ala Leu Gln Thr Phe Gly Ser Glu Ala Glu Asn Gln Asn
 355 360 365
 Gln Pro Trp Val Ile Ile Leu Thr Thr Leu Ala Arg His Pro Leu Ile
 370 375 380
 Thr Pro
 385
 <210>389
 <211>621
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>389
 Asn Ser Glu Ile Phe Glu Ile Phe Met Thr Leu Ile Thr Pro Ala Ile
 1 5 10 15
 Asn Ser Ser Arg Arg Lys Thr His Thr Val Arg Ile Gly Asn Leu Tyr
 20 25 30
 Ile Gly Ser Asp His Ser Ile Lys Thr Gln Ser Met Thr Thr Thr Leu
 35 40 45
 Thr Thr Asp Ile Asp Ser Thr Val Glu Gln Ile Tyr Ala Leu Ala Glu
 50 55 60
 His Asn Cys Asp Ile Val Arg Val Thr Val Gln Gly Ile Lys Glu Ala
 65 70 75 80
 Gln Ala Cys Glu Lys Ile Lys Glu Arg Leu Ile Ala Leu Gly Leu Asn
 85 90 95
 Ile Pro Leu Val Ala Asp Ile His Phe Phe Pro Gln Ala Ala Met Leu
 100 105 110
 Val Ala Asp Phe Ala Asp Lys Val Arg Ile Asn Pro Gly Asn Tyr Ile

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      115      120      125
Asp Lys Arg Asn Met Phe Lys Gly Thr Lys Ile Tyr Thr Glu Ala Ser
  130      135      140
Tyr Ala Gln Ser Leu Leu Arg Leu Glu Glu Lys Phe Ala Pro Leu Val
  145      150      155      160
Glu Lys Cys Lys Arg Leu Gly Lys Ala Met Arg Ile Gly Val Asn His
      165      170      175
Gly Ser Leu Ser Glu Arg Ile Met Gln Lys Tyr Gly Asp Thr Ile Glu
      180      185      190
Gly Met Val Ala Ser Ala Ile Glu Tyr Ile Ala Val Cys Glu Lys Leu
      195      200      205
Asn Tyr Arg Asp Val Val Phe Ser Met Lys Ser Ser Asn Pro Lys Ile
      210      215      220
Met Val Thr Ala Tyr Arg Gln Leu Ala Lys Asp Leu Asp Ala Arg Gly
  225      230      235      240
Trp Leu Tyr Pro Leu His Leu Gly Val Thr Glu Ala Gly Met Gly Val
      245      250      255
Asp Gly Ile Ile Lys Ser Ala Val Gly Ile Gly Thr Leu Leu Ala Glu
      260      265      270
Gly Leu Gly Asp Thr Ile Arg Cys Ser Leu Thr Gly Cys Pro Thr Thr
      275      280      285
Glu Ile Pro Val Cys Asp Ser Leu Leu Arg His Thr Lys Ile Tyr Leu
      290      295      300
Asp Leu Pro Glu Lys Lys Asn Pro Phe Ser Leu Gln His Ser Glu Asn
  305      310      315      320
Phe Val Ser Ala Ala Glu Lys Pro Ala Lys Thr Thr Leu Trp Gly Asp
      325      330      335
Val Tyr Gly Val Phe Leu Lys Leu Tyr Pro His His Leu Thr Asp Phe
      340      345      350
Thr Pro Glu Glu Leu Leu Glu His Leu Gly Val Asn Pro Val Thr Lys
      355      360      365
Glu Lys Ala Phe Thr Thr Pro Glu Gly Val Val Val Pro Pro Glu Leu
      370      375      380
Lys Asp Ala Pro Ile Thr Asp Val Leu Arg Glu His Phe Leu Val Phe
  385      390      395      400
His His His Gln Val Pro Cys Leu Tyr Glu His Asn Glu Glu Ile Trp
      405      410      415
Asp Ser Pro Ala Val His Gln Ala Pro Phe Val His Phe His Ala Ser
      420      425      430
Asp Pro Phe Ile His Thr Ser Arg Asp Phe Phe Glu Lys Gln Gly His
      435      440      445
Gln Gly Lys Pro Thr Lys Leu Val Phe Ser Arg Asp Phe Asp Asn Lys
      450      455      460
Glu Glu Ala Ala Ile Ser Ile Ala Thr Glu Phe Gly Ala Leu Leu Leu
  465      470      475      480
Asp Gly Leu Gly Glu Ala Val Val Leu Asp Leu Pro Asn Leu Pro Leu
      485      490      495
Gln Asp Val Leu Lys Ile Ala Phe Gly Thr Leu Gln Asn Ala Gly Val
      500      505      510
Arg Leu Val Lys Thr Glu Tyr Ile Ser Cys Pro Met Cys Gly Arg Thr
      515      520      525
Leu Phe Asp Leu Glu Glu Val Thr Thr Arg Ile Arg Lys Arg Thr Gln
      530      535      540
His Leu Pro Gly Leu Lys Ile Ala Ile Met Gly Cys Ile Val Asn Gly
  545      550      555      560
Pro Gly Glu Met Ala Asp Ala Asp Phe Gly Phe Val Gly Ser Lys Thr
      565      570      575
Gly Met Ile Asp Leu Tyr Val Lys His Thr Cys Val Lys Ala His Ile
      580      585      590
Pro Met Glu Asp Ala Glu Glu Glu Leu Ile Arg Leu Leu Gln Glu His
      595      600      605
Gly Val Trp Lys Asp Pro Glu Glu Thr Lys Leu Thr Val
      610      615      620
<210>390

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<211>251

<212>PRT

<213>Chlamydia pneumoniae

<400>390

Val Asp Ser Met Thr Leu Ser Phe His Thr His Pro Leu Asn Tyr Trp
 1 5 10 15
 Thr Phe Glu Glu Phe Asp Gly Leu Pro Ile Arg His Gly Val Phe Ser
 20 25 30
 Lys Gln Lys Asp Ala Glu Gly Thr Val Phe Ala Ala Lys Asn Pro Glu
 35 40 45
 Ile Ala Ser Ala Leu Gln Ser Pro Lys Tyr Cys Asp Leu His Gln Arg
 50 55 60
 His Gly Thr Ser Val Arg Cys Val Thr Pro Thr Ser Pro Thr Tyr Gln
 65 70 75 80
 Pro Ala Asp Gly Leu Cys Thr Gln Ser Pro Leu Leu Ser Leu His Ile
 85 90 95
 Arg His Ser Asp Cys Gln Ala Ala Ile Phe Tyr Asp Arg Glu His His
 100 105 110
 Ala Ile Ala Asn Val His Ser Gly Trp Arg Gly Leu Leu Gly Asn Ile
 115 120 125
 Tyr Ala Val Thr Val Gly Thr Met Lys Lys Leu Phe His Thr Lys Pro
 130 135 140
 Gln Asp Leu Phe Val Ala Ile Gly Pro Ser Ile Gly Pro Asp Tyr Ala
 145 150 155 160
 Ile Tyr Pro Asp Tyr Ala Thr Leu Phe Pro Arg Ser Phe Leu Pro Phe
 165 170 175
 Met Asn Pro Lys Asn His Phe Asp Leu Arg Ala Ile Ala Arg Lys Gln
 180 185 190
 Leu Thr Asn Leu Gly Ile Ser Lys Asp Arg Ile Phe Ile Ser Asp Leu
 195 200 205
 Cys Thr Tyr Thr Glu His Asp Ala Phe Phe Ser Ser Arg Tyr Leu Ala
 210 215 220
 His His Pro Asp Pro Asn Leu Thr Gly Gln His Ser Lys Asn Arg Asn
 225 230 235 240
 Asn Val Thr Ala Val Leu Leu Leu Pro Arg Asp
 245 250

<210>391

<211>168

<212>PRT

<213>Chlamydia pneumoniae

<400>391

Arg Leu Ser Met Lys Leu Gly Ala Ser Thr Asn His Lys Val His Glu
 1 5 10 15
 Pro Val Lys Pro Lys Lys Ala Lys Leu Ala Glu Ile Glu Ala Xaa Lys
 20 25 30
 Thr Gln Ala Thr Glu Gly Thr Leu Arg Ser Lys Ser Leu Ala Leu Gln
 35 40 45
 Ile Ala Arg Ala Val Leu Tyr Ile Leu Phe Ala Ala Leu Met Leu Ala
 50 55 60
 Ala Gly Ile Thr Phe Val Thr Phe Glu Ala Leu Gly Phe Pro Leu Ile
 65 70 75 80
 Gln Ala Tyr Ser Ile Ala Gly Ile Ile Thr Leu Val Gly Leu Ala Ile
 85 90 95
 Gly Leu Val Leu Leu Ile Leu Ser Leu Leu Pro Lys Glu Asp Glu Glu
 100 105 110
 Ala Asp Ala Leu Ser Arg Asn Ala Leu Leu Pro Leu Thr Ile Ile Val
 115 120 125
 Ile Glu Gln Gln Pro Ile Thr Pro Lys Pro Glu Ile Pro Tyr Ser Tyr
 130 135 140
 Leu Thr Lys Leu Ala Leu Leu Thr Ser Leu Phe Leu Thr Leu Arg Arg
 145 150 155 160
 Ser Ser Ser Gln Arg Lys Thr His
 165

<210>392

<211>205

<212>PRT

<213>Chlamydia pneumoniae

<400>392

Phe Lys Val Val Thr Ala Lys Ala Pro Asn Leu Thr Glu Ile Arg Asp
 1 5 10 15
 His Gly Ala Arg Val Pro Ser Leu Phe Leu Leu Ser Pro Glu Thr Ser
 20 25 30
 His Trp Lys Gly Asp Lys Glu Val Ser Ala Pro Leu Lys Gln Leu Gln
 35 40 45
 Asp Leu Leu Gly Glu Glu Gln Trp Glu Ala Met Lys Thr Lys Met Asn
 50 55 60
 Ser Arg Lys Lys Ala Gly Gln Trp Ala Ile Phe Asn Ser Pro Thr Pro
 65 70 75 80
 Gly Val Ser Ser Thr Leu Val Leu Ala Trp Thr Pro Trp Gly Tyr Tyr
 85 90 95
 Asp Lys Asp Val Gln Asp Ile Leu Glu Arg Lys Asp Pro Met Ser Ser
 100 105 110
 Ser Leu Ser Glu Lys Asp Ser Lys Glu Phe Leu Lys Asn Leu Phe Val
 115 120 125
 Asp Leu Leu Glu Asn Gly Phe Thr Ser Val His Ile His Ala Glu Glu
 130 135 140
 Ala Phe Thr Pro Leu Asp His Thr Gly Lys Pro His Phe Lys Arg Asp
 145 150 155 160
 Asn Val Tyr Leu Pro Gly Lys Leu Leu Gly Ala Leu Asn Glu Ala Ala
 165 170 175
 Val Gln Ala Asn Val Ser Ala Asp Thr Gln Phe Thr Leu Phe Leu Thr
 180 185 190
 Gln Asp Glu Cys Asn Pro Phe His Asp Lys Lys Arg Gly
 195 200 205

<210>393

<211>147

<212>PRT

<213>Chlamydia pneumoniae

<400>393

Trp Arg Gly Asp Cys Tyr Arg His Tyr Tyr Asp Ile Ser Ile Ala Val
 1 5 10 15
 Gly Ile Asp Arg Gly Leu Val Val Pro Val Ile Arg Asp Cys Asp Lys
 20 25 30
 Leu Ser Asn Gly Glu Ile Glu Gln Lys Leu Ala Asp Leu Ser Leu Arg
 35 40 45
 Ala Arg Glu Gly Leu Leu Ala Ile Ala Glu Leu Glu Gly Gly Gly Phe
 50 55 60
 Thr Ile Thr Asn Gly Gly Val Tyr Gly Ser Leu Leu Ser Thr Pro Ile
 65 70 75 80
 Ile Asn Pro Pro Gln Val Gly Ile Leu Gly Met His Lys Ile Glu Lys
 85 90 95
 Arg Pro Val Val Leu Asp Asn Glu Ile Val Ile Ala Asp Met Met Tyr
 100 105 110
 Val Ala Leu Ser Tyr Asp His Arg Leu Ile Asp Gly Lys Glu Ala Val
 115 120 125
 Gly Phe Leu Val Lys Val Lys Glu Gly Leu Glu Asn Pro Ala Ser Leu
 130 135 140
 Leu Asp Leu
 145

<210>394

<211>233

<212>PRT

<213>Chlamydia pneumoniae

<400>394

Ile Met Thr Thr Glu Val Arg Ile Pro Asn Ile Ala Glu Ser Ile Ser
 1 5 10 15
 Glu Val Thr Val Ala Ser Leu Leu Val Thr Glu Gly Ala Leu Ile Gln
 20 25 30

Glu Asn Gln Gly Leu Leu Glu Ile Glu Ser Asp Lys Val Asn Gln Leu
 35 40 45
 Ile Tyr Ala Pro Val Ser Gly Arg Ile Phe Trp Glu Val Ser Glu Gly
 50 55 60
 Asp Val Val Pro Val Gly Gly Val Val Gly Lys Ile Glu Pro Ala Gly
 65 70 75 80
 Glu Gly Glu Glu Leu Gly Asp Ser Gln Ser Lys Glu Thr Ile Glu Ala
 85 90 95
 Glu Ile Ile Cys Phe Pro Gln Ser Gly Val Arg Gln Ser Pro Pro Glu
 100 105 110
 Asn Lys Thr Phe Ile Pro Leu Arg Asp Gln Met Asp Gln Gly Ser Gln
 115 120 125
 Gly Leu Ser Ala Gly Asp Arg Gly Glu Thr Arg Glu Arg Met Thr Ser
 130 135 140
 Ile Arg Lys Thr Ile Ser Arg Arg Leu Leu Ser Ala Leu His Glu Ser
 145 150 155 160
 Ala Met Leu Thr Thr Phe Asn Glu Val Tyr Met Thr Pro Leu Phe His
 165 170 175
 Leu Arg Lys Glu Lys Gln Glu Glu Phe Leu Ser Arg Tyr Gly Val Lys
 180 185 190
 Leu Gly Phe Met Ser Phe Phe Val Lys Ala Val Leu Glu Ala Leu Lys
 195 200 205
 Ala Tyr Pro Arg Val Asn Ala Tyr Ile Asp Gly Glu Glu Ile Val Thr
 210 215 220
 Val Thr Ile Met Thr Phe Leu Leu Leu
 225 230
 <210>395
 <211>915
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>395
 Ile Val Phe Ile Glu Phe Asn Tyr Phe Met Asp Ser Glu Phe Val Gly
 1 5 10 15
 Gln Val Tyr Ser Ser Asp Met Asp Trp Ile Glu Ser Met Tyr Gln Arg
 20 25 30
 Phe Met Asn His Glu Thr Leu Asp Pro Ser Trp Lys Tyr Phe Phe Glu
 35 40 45
 Gly Tyr Gln Leu Gly Gln Ala Ala Ser Pro Ser Glu Ala Ser Thr Lys
 50 55 60
 Ile Ser Gly Asn Glu Thr Ile Ala Met Leu Gln Glu Gln Lys Ser Gln
 65 70 75 80
 Phe Leu Cys Thr Ile Tyr Arg Tyr Tyr Gly Tyr Leu Gln Ser Gln Ile
 85 90 95
 Ser Thr Leu Ala Pro Thr Thr Asp Ser Arg Phe Ile Gln Glu Lys Ile
 100 105 110
 Ala Lys Ile Asp Leu Asp Glu Gln Val Pro Ser Ala Gly Leu Leu Pro
 115 120 125
 Lys Ala Gln Val Ser Val Arg Glu Leu Ile Glu Ala Leu Lys Lys Cys
 130 135 140
 Tyr Cys Gly Ser Leu Thr Leu Glu Thr Leu Thr Cys Thr Pro Glu Leu
 145 150 155 160
 Gln Glu Phe Val Trp Asn Leu Met Glu Lys Arg Gln Val Glu Arg Phe
 165 170 175
 Ala Glu Gln Leu Leu Arg Ser Tyr Lys Asp Leu Cys Lys Ala Thr Phe
 180 185 190
 Phe Glu Glu Phe Leu Gln Ile Lys Phe Thr Gly Gln Lys Arg Phe Ser
 195 200 205
 Leu Glu Gly Gly Glu Thr Leu Val Pro Met Leu Glu His Leu Val His
 210 215 220
 Tyr Gly Ser Ala Leu Gly Ile Ser Asn Tyr Val Leu Gly Met Ala His
 225 230 235 240
 Arg Gly Arg Leu Asn Val Leu Thr Asn Val Leu Gly Lys Pro Tyr Arg
 245 250 255
 Tyr Val Phe Met Glu Phe Glu Asp Asp Pro Ala Ala Arg Gly Leu Glu

PCT/LB98/01890

600

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      770              775              780
Gly Gly Phe Arg Ala Ile Leu Glu Asp Ala Asp Pro Asn Tyr Asp Ala
785              790              795              800
Ser Ile Leu Val Leu Cys Ser Gly Lys Ile Tyr Tyr Asp Tyr Ala Glu
      805              810              815
Met Leu Pro Gln Asp Arg Arg Lys Asp Phe Ser Cys Leu Arg Ile Glu
      820              825              830
Ser Leu Tyr Pro Leu Ala Leu Glu Asp Leu Val Ser Leu Ile Asp Lys
      835              840              845
Tyr Ser His Leu Lys His Phe Val Trp Leu Gln Glu Glu Ser Lys Asn
      850              855              860
Met Gly Ala Tyr Asp Tyr Met Phe Met Ala Leu Gln Asp Ile Leu Pro
865              870              875              880
Glu Lys Leu Leu Tyr Ile Gly Arg Pro Arg Ser Ser Ser Thr Ala Ser
      885              890              895
Gly Ser Ala Lys Ser Val Val Lys Ser Trp Ser Arg Val Trp Lys Pro
      900              905              910
Ser Phe Leu
      915
<210>396
<211>394
<212>PRT
<213>Chlamydia pneumoniae
<400>396
Met Lys Thr Leu Ser Ala Ile Ala Ile Ala Gly Asp Ala Val Val Ser
  1              5              10              15
Leu Ile Pro Met Leu Met Asn Gly Lys Ala Pro Leu Ala Leu Tyr Ile
      20              25              30
His Ile Pro Phe Cys Thr Lys Lys Cys Arg Tyr Cys Ser Phe Tyr Thr
      35              40              45
Ile Pro Tyr Lys Ser Glu Ser Val Ser Leu Tyr Cys Asn Ala Val Ile
      50              55              60
Gln Glu Gly Leu Arg Lys Leu Ala Pro Ile Gln Glu Thr His Phe Ile
      65              70              75              80
Glu Thr Val Phe Phe Gly Gly Gly Thr Pro Ser Leu Val Ser Pro Leu
      85              90              95
Asp Leu Lys Arg Ile Leu Lys Glu Leu Ala Pro His Ala Arg Glu Ile
      100              105              110
Thr Leu Glu Ala Asn Pro Glu Asn Leu Thr Val Ser Tyr Leu Arg Gln
      115              120              125
Leu Gln Glu Thr Pro Ile Asn Arg Ile Ser Val Gly Val Gln Thr Phe
      130              135              140
Asp Asp Ser Ile Leu Gln Leu Leu Gly Arg Thr His Ser Ser Ser Ala
      145              150              155              160
Ala Ile Thr Ala Leu Gln Glu Cys Gln Asn His Gly Phe Ser Asn Leu
      165              170              175
Ser Ile Asp Leu Ile Tyr Gly Leu Pro Thr Gln Ser Leu Glu Ile Phe
      180              185              190
Leu Ser Asp Leu His Gln Ala Leu Thr Leu Pro Ile Thr His Ile Ser
      195              200              205
Leu Tyr Asn Leu Thr Ile Asp Pro His Thr Ser Phe Tyr Lys His Arg
      210              215              220
Lys Ile Leu Val Pro Thr Ile Ala Gln Glu Glu Ile Leu Ala Glu Met
      225              230              235              240
Ser Leu Leu Ala Glu Asn Leu Leu Leu Ser Gln Gly Phe Gln Arg Tyr
      245              250              255
Glu Leu Ala Ser Tyr Ala Lys Pro Asp Tyr Pro Ala Lys His Asn Leu
      260              265              270
Tyr Tyr Trp Thr Asp Arg Pro Phe Leu Gly Leu Gly Val Ser Ala Ser
      275              280              285
Gln Tyr Leu His Gly Glu Arg Ser Lys Asn Tyr Ser His Ile Ser His
      290              295              300
Tyr Leu Arg Ala Val Arg Lys Asn Leu Pro Thr Gln Glu Thr Ser Glu
      305              310              315              320

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Ile Leu Pro Lys Lys Glu Arg Ile Lys Glu Ala Leu Ala Leu Arg Leu
                      325                      330                      335
Arg Leu Leu Glu Gly Ala Asp Leu Ala Glu Phe Pro Ser Thr Leu Ile
                      340                      345                      350
Ser Met Leu Thr Gln Asp Val Lys Leu Gln Asn Leu Phe Ser Val His
                      355                      360                      365
Gly Gln Cys Leu Ala Leu Asn Arg Gln Gly Arg Leu Phe His Asp Thr
                      370                      375                      380
Ile Ala Glu Glu Ile Met Gly Tyr Ser Phe
385                      390
<210>397
<211>600
<212>PRT
<213>Chlamydia pneumoniae
<400>397
Ser Leu Pro Asn Lys Phe Arg Ala Leu Met Thr Ala Pro Thr Glu Ser
 1                      5                      10                      15
Arg Ser Ser Pro Pro Thr Leu Leu Glu Glu Thr Glu Pro Leu Ser Pro
                      20                      25                      30
Asn Pro Ile Pro Ala Asp Ile Gln Ile Pro Arg Ile Thr Ile Ser Pro
                      35                      40                      45
Pro Ser Leu Asp Val Ser Thr Val Ala Ser Ser Ala Glu Asp Ile Ser
                      50                      55                      60
Val Phe Ile Ala Gly Gly Pro Arg Ser Ser Ser Ala Ser Val Ala
                      65                      70                      75                      80
Ser Asp Val Tyr Glu Leu Val Cys Leu Cys Gly Gly Asp Glu Asp Pro
                      85                      90                      95
Glu Pro Pro Asp Ser Glu Val Arg Thr Leu Tyr Val Asn Gly Ser Trp
                      100                     105                     110
Gln Thr His Gln Glu Ala Val Gln Glu Leu Leu Tyr Ile Ser Glu Val
                      115                     120                     125
Arg Gly Glu Ala Val Arg Leu Leu Tyr Asn Asp Gly Ser Gly Met Ser
                      130                     135                     140
Pro Trp Pro Ile Ser Pro Cys Arg Thr Leu Pro Thr Leu Asp His Pro
145                      150                      155                      160
Leu Cys Gln Ala Leu Leu Thr Val Trp Glu Gln Phe Phe Ser Ala Pro
                      165                      170                      175
Glu Asn Gln Asn Arg Glu Phe Leu Val Ile Phe Tyr Gly Asp Ala Ser
                      180                      185                      190
Pro Tyr Ile Gln Gln Ala Leu Thr Gln Ser Arg His Ser Pro Arg Ile
                      195                     200                     205
Val Val Val Gly Ile Ser Pro Thr Val Phe Ile Gln Gly Asp Phe Arg
                      210                     215                     220
Val His Asn Tyr Arg Val Ser Gly Asp Phe Phe Ser Ser Leu Asp Cys
225                      230                      235                      240
Arg Gly Thr Arg Ala Glu Asn Thr Thr Ile Leu Pro Tyr Ser Ser Gly
                      245                     250                     255
Leu Glu Gly Val Phe Leu Pro Ser Ile Arg Cys Pro Ser Phe Thr Trp
                      260                     265                     270
Ala Val Arg Phe Gly Glu Gln Cys Leu Val Ala Asn Arg Gly Glu Asp
                      275                     280                     285
Val Glu Asp Arg Gly Gly Leu Ser Gln Asp Ala Glu Arg Ser Gln Leu
                      290                     295                     300
Pro His Ser Glu Arg Asp Leu Ala Val Val Ile Asp Ser Thr Asp Pro
305                      310                      315                      320
Ser Ser Met Ser Arg Leu Val Glu Trp Leu Asn Gln Gly Ser Pro Ser
                      325                     330                     335
Ser Asp Met Glu Ile Asn Pro Tyr Pro Gln Arg Cys Pro Asp Val Ala
                      340                     345                     350
Leu Ser Ala Leu Tyr Ala Ile Ser Arg Val Ser Gly Leu Ala Gln Glu
                      355                     360                     365
Trp Ile Leu Ala Ser Val His Glu Gly Leu Asp Leu Gln Ile Cys Tyr
                      370                     375                     380
Ser Leu Ile Leu Met His Thr Thr Phe Ala Val Arg Tyr Phe Phe Leu

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385          390          395          400
Leu Phe Thr Asn Tyr Pro Gln Ser Arg Glu Arg Phe Arg Thr Ala Arg
          405          410          415
Ile Val Ala Gln Ser Leu Tyr Leu Pro Ser Ile Leu Val Leu Val Phe
          420          425          430
Asp Cys Gly Asn Val Leu Arg Lys Leu Trp Met Pro Gln Glu Ile Leu
          435          440          445
Arg Ala Ile Phe Ile Ser Ala Ser Thr Ile Ser Gly Ser Ile Val Phe
          450          455          460
Val Glu Cys Thr Arg Trp Met Gly Arg Gly Leu Arg His Arg Val Gln
          465          470          475          480
Gln Phe Val Gln Gln Arg Val Ile Gly Ser Gly Leu Pro Val Gly Thr
          485          490          495
Val Arg Ala Ser Tyr Arg Asp Arg Ala Gly Phe Ile Ile Gly Phe Leu
          500          505          510
Gln Thr Val His Gly Gly Leu Tyr Leu Pro Val Ser Ile Met Val Leu
          515          520          525
Asn Gln Ile Ala Ile Gln Val Pro Arg Ile Leu Val Arg Pro Asn Asn
          530          535          540
Thr Ala Val Tyr Asp Leu His Asn Lys Ser Ala Glu Glu Asn Trp Ser
          545          550          555          560
Ser Gly Asp Val Leu Ala Val Gly Gln Thr Leu Asn Phe Ile Leu Cys
          565          570          575          580
Ala Phe Val Leu Phe Val Asn Leu Trp Phe Phe Val Lys Ser Val Leu
          585          590
Arg His Ser Arg Arg Arg Arg Arg
          595          600

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<210>398

<211>115

<212>PRT

<213>Chlamydia pneumoniae

<400>398

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Arg Val Arg Thr Ser Glu Ser Gly Gly Ser Gly Ser Ser Ser Pro Pro
1          5          10          15
Gln Arg Gln Thr Asn Ser Tyr Thr Ser Glu Ala Thr Glu Ala Asp Glu
20          25          30
Glu Leu Leu Gly Pro Pro Ala Met Lys Thr Glu Ile Ser Ser Ala Glu
35          40          45
Asp Ala Thr Val Asp Thr Ser Arg Glu Gly Gly Asp Ile Val Ile Leu
50          55          60
Gly Ile Trp Ile Ser Ala Gly Ile Gly Phe Gly Asp Arg Gly Ser Val
65          70          75          80
Ser Ser Ser Ser Val Gly Gly Glu Asp Arg Asp Ser Val Gly Ala Val
85          90          95
Ile Asn Ala Leu Asn Leu Phe Gly Lys Asp Tyr Lys Ile Ser Ile Asp
100          105          110
Asn Thr Gln
115

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<210>399

<211>239

<212>PRT

<213>Chlamydia pneumoniae

<400>399

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Pro Val Thr Leu Tyr Leu Leu Pro Asn Thr Leu Gly Thr Arg Ala Val
1          5          10          15
Glu Thr Leu Pro Ser Val Ile Gly Glu Leu Val His Arg Leu Asp Gly
20          25          30
Leu Ile Val Glu Ser Asp Arg Gly Gly Arg Ala Phe Leu Ser Leu Trp
35          40          45
Lys Ile Pro Glu Val His Lys Phe Pro Leu Ala Ile Leu Ser Lys His
50          55          60
Ala Arg Leu Pro Lys Ala Trp Asp Phe Tyr Leu Glu Pro Ile Val Lys
65          70          75          80
His Gly Glu Asn Trp Gly Leu Ile Ser Asp Ala Gly Leu Pro Cys Ile

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85 90 95
 Ala Asp Pro Gly Ala Ser Leu Val Arg Arg Ala Arg Ala Leu Gly Ile
 100 105 110
 Pro Val Gln Ala Phe Ser Gly Pro Cys Ser Ile Thr Leu Ala Leu Met
 115 120 125
 Leu Ser Gly Leu Pro Ser Gln Ser Phe Thr Phe Leu Gly Tyr Leu Pro
 130 135 140
 Gln Ser Pro Lys Glu Arg Val Lys Ser Ile Lys Lys Ala Ala Thr Ser
 145 150 155 160
 Lys Glu Val Ser Thr Ser Val Cys Ile Glu Thr Pro Tyr Arg Asn Val
 165 170 175
 Tyr Thr Phe Glu Ser Leu Leu Asp Thr Leu Pro Ser Tyr Ala Glu Leu
 180 185 190
 Cys Val Ala Ser Asp Leu Ser Gly Pro Ser Glu Leu Val Leu Thr Arg
 195 200 205
 Gln Val Gln Ser Trp Arg Thr Thr Glu Asp Leu Gly Ser Val Lys Gln
 210 215 220
 Ser Ile Thr Lys Val Pro Thr Ile Phe Leu Phe His Ile Pro Asn
 225 230 235

<210>400

<211>98

<212>PRT

<213>Chlamydia pneumoniae

<400>400

Gly Val Ser Ile His Thr Glu Val Asp Thr Ser Leu Glu Val Ala Ala
 1 5 10 15
 Phe Phe Ile Asp Phe Thr Arg Ser Leu Gly Leu Cys Gly Arg Tyr Pro
 20 25 30
 Lys Asn Val Lys Leu Trp Glu Gly Lys Pro Glu Ser Met Ser Ala Asn
 35 40 45
 Val Ile Glu Gln Gly Pro Glu Lys Ala Cys Thr Gly Ile Pro Lys Ala
 50 55 60
 Arg Ala Arg Arg Thr Lys Leu Ala Pro Gly Ser Ala Ile Gln Gly Arg
 65 70 75 80
 Pro Ala Ser Glu Ile Ser Pro Gln Phe Ser Pro Cys Phe Thr Ile Gly
 85 90 95
 Ser Arg

<210>401

<211>321

<212>PRT

<213>Chlamydia pneumoniae

<400>401

Val Gln Asp Thr Thr Phe Leu Thr Leu Pro Met Gln Lys Ser Leu Thr
 1 5 10 15
 Ser Phe Asp Asp Phe Ser Gln Ala Tyr Ala Glu Lys Val Pro Ala Ile
 20 25 30
 Ala Leu Ile Gly Ser Ala Leu Glu Asp Asp Lys Asp Ala Leu Ile Glu
 35 40 45
 Leu Leu Val Ser Glu Ser Phe Lys Glu Leu Gly Gly Gln Gly Leu Met
 50 55 60
 Pro Ala Thr Leu Met Ser Trp Thr Glu Thr Phe Ala Leu Phe Gln Glu
 65 70 75 80
 His Glu Thr Leu Gly Ile Ile His Ala Glu Lys Phe Pro Leu Ala Thr
 85 90 95
 Lys Glu Phe Leu Ser Arg Tyr Ala Arg Asn Pro Gln Pro His Leu Thr
 100 105 110
 Ile Leu Ile Phe Thr Thr Lys Gln Glu Cys Phe Arg Glu Leu Ser Lys
 115 120 125
 Ala Leu Pro Ser Ala Leu Ser Leu Ser Leu Phe Gly Glu Trp Pro Ala
 130 135 140
 Asp Arg Gln Lys Arg Ile Ile Arg Leu Leu Leu Gln Arg Ala Glu Arg
 145 150 155 160
 Val Gly Ile Ser Cys Ser Gln Ser Leu Ala Ser Leu Phe Leu Arg Ala

165 170 175
 Leu Ala Ser Thr Ser Leu Pro Asp Ile Leu Ser Glu Phe Asp Lys Leu
 180 185 190
 Leu Cys Ser Val Gly Lys Lys Thr Ser Leu Asp His Ser Asp Ile Lys
 195 200 205
 Glu Leu Val Val Lys Lys Glu Lys Ala Ser Leu Trp Lys Phe Arg Asp
 210 215 220
 Ser Leu Leu Lys Arg Asp Pro Val Glu Gly His Gln Gln Leu His Phe
 225 230 235 240
 Leu Leu Glu Asp Gly Glu Asp Pro Leu Gly Ile Ile Thr Phe Leu Arg
 245 250 255
 Thr Gln Cys Leu Tyr Gly Leu Arg Ser Ile Glu Glu Gly Ser Lys Glu
 260 265 270
 Asn Lys His Arg Met Phe Val Leu Tyr Gly Lys Glu Arg Leu His Gln
 275 280 285
 Ala Leu Asn Ser Leu Phe Tyr Ala Glu Thr Leu Ile Lys Asn Asn Val
 290 295 300
 Gln Asp Pro Ile Val Ala Val Glu Thr Leu Val Ile Arg Met Val Asn
 305 310 315 320
 Leu

<210>402

<211>182

<212>PRT

<213>Chlamydia pneumoniae

<400>402

Val Ile Thr Cys Leu Ile Arg Gly Ile Lys Met Ile Gly Ala Gln Lys
 1 5 10 15
 Lys Gln Ser Gly Lys Lys Thr Ala Ser Arg Ala Val Arg Lys Pro Ala
 20 25 30
 Lys Lys Val Ala Ala Lys Arg Thr Val Lys Lys Ala Thr Val Arg Lys
 35 40 45
 Thr Ala Val Lys Lys Pro Ala Val Arg Lys Thr Ala Ala Lys Lys Thr
 50 55 60
 Val Ala Lys Lys Thr Thr Ala Lys Arg Thr Val Arg Lys Thr Val Ala
 65 70 75 80
 Lys Lys Pro Ala Val Lys Lys Val Ala Ala Lys Arg Val Val Lys Lys
 85 90 95
 Thr Val Ala Lys Lys Thr Thr Ala Lys Arg Ala Val Arg Lys Thr Val
 100 105 110
 Ala Lys Lys Pro Val Ala Arg Lys Thr Thr Val Ala Lys Gly Ser Pro
 115 120 125
 Lys Lys Ala Ala Ala Cys Ala Leu Ala Cys His Xaa Asn His Lys His
 130 135 140
 Thr Ser Ser Cys Lys Arg Val Cys Ser Ser Thr Ala Thr Arg Lys His
 145 150 155 160
 Gly Ser Lys Ser Arg Val Arg Thr Ala Xaa Gly Trp Arg His Gln Leu
 165 170 175
 Ile Lys Met Met Ser Arg
 180

<210>403

<211>197

<212>PRT

<213>Chlamydia pneumoniae

<400>403

Arg Gln Pro Xaa Ala Val Arg Thr Arg Leu Leu Glu Pro Cys Phe Leu
 1 5 10 15
 Val Ala Val Glu Glu Gln Thr Arg Leu Gln Leu Asp Val Cys Leu Trp
 20 25 30
 Phe Xaa Trp His Ala Lys Ala Gln Ala Ala Ala Phe Leu Gly Glu Pro
 35 40 45
 Leu Ala Thr Val Val Phe Leu Ala Thr Gly Phe Leu Ala Thr Val Leu
 50 55 60
 Arg Thr Ala Leu Leu Ala Val Val Phe Phe Ala Thr Val Phe Phe Thr

65 70 75 80
 Thr Arg Leu Ala Ala Thr Phe Leu Thr Ala Gly Phe Leu Ala Thr Val
 85 90 95
 Leu Arg Thr Val Leu Leu Ala Val Val Phe Phe Ala Thr Val Phe Leu
 100 105 110
 Ala Ala Val Leu Arg Thr Ala Gly Phe Phe Thr Ala Val Leu Arg Thr
 115 120 125
 Val Ala Phe Leu Thr Val Arg Leu Ala Ala Thr Phe Leu Ala Gly Phe
 130 135 140
 Arg Thr Ala Leu Glu Ala Val Phe Leu Pro Leu Cys Phe Phe Cys Ala
 145 150 155 160
 Pro Ile Ile Phe Ile Pro Leu Ile Arg Gln Val Ile Thr Tyr Leu Ile
 165 170 175
 Tyr Arg Gln Gly Arg Leu Lys Thr Leu Ile Lys Lys Met Thr Phe Ile
 180 185 190
 Leu Lys Lys Leu Lys
 195

<210>404

<211>192

<212>PRT

<213>Chlamydia pneumoniae

<400>404

Met Ser Arg Gly Ser Phe Leu Leu Thr Glu Asn Ala Ile Asp Gly Ala
 1 5 10 15
 Ser Tyr Lys Met Gly Asp Val Tyr Val Gly Met Ser Gly Leu Ser Val
 20 25 30
 Glu Ile Cys Ser Thr Asp Ala Glu Gly Arg Leu Ile Leu Ala Asp Ala
 35 40 45
 Ile Thr Tyr Ala Leu Lys Tyr Cys Lys Pro Thr Arg Ile Ile Asp Phe
 50 55 60
 Ala Thr Leu Thr Gly Ala Met Val Val Ser Leu Gly Glu Glu Val Ala
 65 70 75 80
 Gly Phe Phe Ser Asn Asn Asp Val Leu Ala Glu Asp Leu Leu Glu Ala
 85 90 95
 Ser Ala Glu Thr Ser Glu Pro Leu Trp Arg Leu Pro Leu Val Lys Lys
 100 105 110
 Tyr Asp Lys Thr Leu His Ser Asp Ile Ala Asp Met Lys Asn Leu Gly
 115 120 125
 Ser Asn Arg Ala Gly Ala Ile Thr Ala Ala Leu Phe Leu Gln Arg Phe
 130 135 140
 Leu Glu Glu Ser Ser Val Ala Trp Ala His Leu Asp Ile Ala Gly Thr
 145 150 155 160
 Ala Tyr His Glu Lys Glu Glu Asp Arg Tyr Pro Lys Tyr Ala Ser Gly
 165 170 175
 Phe Gly Val Arg Ser Ile Leu Tyr Tyr Leu Glu Asn Ser Leu Ser Lys
 180 185 190

<210>405

<211>325

<212>PRT

<213>Chlamydia pneumoniae

<400>405

Val Val Leu Phe His Ala Gln Ala Ser Gly Arg Asn Arg Val Lys Ala
 1 5 10 15
 Asp Ala Ile Val Leu Pro Phe Trp His Phe Lys Asp Ala Lys Asn Ala
 20 25 30
 Ala Ser Phe Glu Ala Glu Phe Glu Pro Ser Tyr Leu Pro Ala Leu Glu
 35 40 45
 Asn Phe Gln Gly Lys Thr Gly Glu Ile Glu Leu Leu Tyr Ser Ser Pro
 50 55 60
 Lys Ala Lys Glu Lys Arg Ile Val Leu Leu Gly Leu Gly Lys Asn Glu
 65 70 75 80
 Glu Leu Thr Ser Asp Val Val Phe Gln Thr Tyr Ala Thr Leu Thr Arg
 85 90 95
 Val Leu Arg Lys Ala Lys Cys Ser Thr Val Asn Ile Ile Leu Pro Thr

100 105 110
 Ile Ser Glu Leu Arg Leu Ser Ala Glu Glu Phe Leu Val Gly Leu Ser
 115 120 125
 Ser Gly Ile Leu Ser Leu Asn Tyr Asp Tyr Pro Arg Tyr Asn Lys Val
 130 135 140
 Asp Arg Asn Leu Glu Thr Pro Leu Ser Lys Val Thr Val Ile Gly Ile
 145 150 155 160
 Val Pro Lys Met Ala Asp Ala Ile Phe Arg Lys Glu Ala Ala Ile Phe
 165 170 175
 Glu Gly Val Tyr Leu Thr Arg Asp Leu Val Asn Arg Asn Ala Asp Glu
 180 185 190
 Ile Thr Pro Lys Lys Leu Ala Glu Val Ala Leu Asn Leu Gly Lys Glu
 195 200 205
 Phe Pro Ser Ile Asp Thr Lys Val Leu Gly Lys Asp Ala Ile Ala Lys
 210 215 220
 Glu Lys Met Gly Leu Leu Leu Ala Val Ser Lys Gly Ser Cys Val Asp
 225 230 235 240
 Pro His Phe Ile Val Val Arg Tyr Gln Gly Arg Pro Lys Ser Lys Asp
 245 250 255
 His Thr Val Leu Ile Gly Lys Gly Val Thr Phe Asp Ser Gly Gly Leu
 260 265 270
 Asp Leu Lys Pro Gly Lys Ser Met Leu Thr Met Lys Glu Asp Met Ala
 275 280 285
 Gly Gly Ala Thr Val Leu Gly Ile Leu Ser Ala Leu Ala Xaa Leu Glu
 290 295 300
 Leu Pro Ile Asn Val Thr Gly Ile Ile Pro Ala Tyr Arg Glu Cys Tyr
 305 310 315 320
 Arg Trp Arg Leu Leu
 325

<210>406

<211>105

<212>PRT

<213>Chlamydia pneumoniae

<400>406

Asp Ala Ser Leu Leu Glu Glu Arg Leu Arg Ser His Cys Cys Trp Arg
 1 5 10 15
 Tyr Leu Cys Arg Glu Leu His Glu Gln Arg Trp Phe His Arg Asn Ser
 20 25 30
 Ser Leu Val Ile Ser Val Asp Ser Leu Lys Phe Ser Pro Phe Gly Arg
 35 40 45
 Asn Glu Gly Ser Arg Ser Pro Ser Leu Glu Asp Asn His Gln Gln Val
 50 55 60
 Gly Tyr Glu Ser Val Ser Val Gly Phe Glu Gly Glu Ala Leu Asp Ala
 65 70 75 80
 Glu Ala Ile Lys Asp Lys Asp Met Tyr Ala Gly Tyr Gly Gln Glu Gln
 85 90 95
 Gln Tyr Val Cys Glu Asp Val Pro Phe
 100 105

<210>407

<211>89

<212>PRT

<213>Chlamydia pneumoniae

<400>407

Met Met Phe Gly His Phe Ala Gly Tyr Leu Gly Ala Asp Pro Glu Glu
 1 5 10 15
 Arg Met Thr Ser Lys Gly Lys Arg Val Ile Thr Leu Arg Leu Gly Val
 20 25 30
 Lys Thr Arg Val Gly Met Lys Asp Glu Thr Val Trp Cys Lys Cys Asn
 35 40 45
 Ile Trp His Asn Arg Tyr Asp Lys Met Leu Pro Tyr Leu Lys Lys Gly
 50 55 60
 Ser Gly Val Ile Val Ala Gly Asp Ile Ser Val Glu Ser Tyr Met Ser
 65 70 75 80
 Lys Asp Gly Phe Thr Ala Ile Leu Leu

85

<210>408

<211>179

<212>PRT

<213>Chlamydia pneumoniae

<400>408

Leu Glu Thr Thr Thr Ile Tyr Tyr Lys Glu Ile Pro Ser Cys Pro Arg
 1 5 10 15
 Gln Asn Ala Glu Asn Leu Lys Asn Phe Ala Lys Glu Leu Lys Leu
 20 25 30
 Pro Asp Val Ala Phe Asp Gln Asn Asn Thr Cys Ile Leu Phe Val Asp
 35 40 45
 Gly Glu Phe Ser Leu His Leu Thr Tyr Glu Glu His Ser Asp Arg Leu
 50 55 60
 Tyr Val Tyr Ala Pro Leu Leu Asp Gly Leu Pro Asp Asn Thr Gln Arg
 65 70 75 80
 Lys Leu Ala Leu Tyr Glu Lys Leu Leu Glu Gly Ser Met Leu Gly Gly
 85 90 95
 Gln Met Ala Gly Gly Val Gly Val Ala Thr Lys Glu Gln Leu Ile
 100 105 110
 Leu Met His Cys Val Leu Asp Met Lys Tyr Ala Glu Thr Asn Leu Leu
 115 120 125
 Lys Ala Phe Ala Gln Leu Phe Ile Glu Thr Val Val Lys Trp Arg Thr
 130 135 140
 Val Cys Ala Asp Ile Cys Ala Gly Arg Glu Pro Ser Val Asp Thr Met
 145 150 155 160
 Pro Gln Met Pro Gln Gly Gly Gly Gly Met Gln Pro Pro Pro Thr Gly
 165 170 175
 Ile Arg Ala

<210>409

<211>666

<212>PRT

<213>Chlamydia pneumoniae

<400>409

Ser Thr Met Glu Lys Val Ser Ser Tyr Pro Ser Val Pro Leu Pro Leu
 1 5 10 15
 Gly Ala Ser Lys Ile Ser Pro Asn Arg Tyr Arg Phe Ala Leu Tyr Ala
 20 25 30
 Ser Gln Ala Thr Glu Val Ile Leu Ala Leu Thr Asp Glu Asn Ser Glu
 35 40 45
 Val Ile Glu Val Pro Leu Tyr Pro Asp Thr His Arg Thr Gly Ala Ile
 50 55 60
 Trp His Ile Glu Ile Glu Gly Ile Ser Asp Gln Ser Ser Tyr Ala Phe
 65 70 75 80
 Arg Val His Gly Pro Lys Lys His Gly Met Gln Tyr Ser Phe Lys Glu
 85 90 95
 Tyr Leu Ala Asp Pro Tyr Ala Lys Asn Ile His Ser Pro Gln Ser Phe
 100 105 110
 Gly Ser Arg Lys Lys Gln Gly Asp Tyr Ala Phe Cys Tyr Leu Lys Glu
 115 120 125
 Glu Pro Phe Pro Trp Asp Gly Asp Gln Pro Leu His Leu Pro Lys Glu
 130 135 140
 Glu Met Ile Ile Tyr Glu Met His Val Arg Ser Phe Thr Gln Ser Ser
 145 150 155 160
 Ser Ser Arg Val His Ala Pro Gly Thr Phe Leu Gly Ile Ile Glu Lys
 165 170 175
 Ile Asp His Leu His Lys Leu Gly Ile Asn Ala Val Glu Leu Leu Pro
 180 185 190
 Ile Phe Glu Phe Asp Glu Thr Ala His Pro Phe Arg Asn Ser Lys Phe
 195 200 205
 Pro Tyr Leu Cys Asn Tyr Trp Gly Tyr Ala Pro Leu Asn Phe Phe Ser
 210 215 220
 Pro Cys Arg Arg Tyr Ala Tyr Ala Ser Asp Pro Cys Ala Pro Ser Arg

225 230 235 240
 Glu Phe Lys Thr Leu Val Lys Thr Leu His Gln Glu Gly Ile Glu Val
 245 250 255
 Ile Leu Asp Val Val Phe Asn His Thr Gly Leu Gln Gly Thr Thr Cys
 260 265 270
 Ser Leu Pro Trp Ile Asp Thr Pro Ser Tyr Tyr Ile Leu Asp Ala Gln
 275 280 285
 Gly His Phe Thr Asn Tyr Ser Gly Cys Gly Asn Thr Leu Asn Thr Asn
 290 295 300
 Arg Ala Pro Thr Thr Gln Trp Ile Leu Asp Ile Leu Arg Tyr Trp Val
 305 310 315 320
 Glu Glu Met His Val Asp Gly Phe Arg Phe Asp Leu Ala Ser Val Phe
 325 330 335
 Ser Arg Gly Pro Ser Gly Ser Pro Leu Gln Phe Ala Pro Val Leu Glu
 340 345 350
 Ala Ile Ser Phe Asp Pro Leu Leu Ala Ser Thr Lys Ile Ile Ala Glu
 355 360 365
 Pro Trp Asp Ala Gly Gly Leu Tyr Gln Val Gly Tyr Phe Pro Thr Leu
 370 375 380
 Ser Pro Arg Trp Ser Glu Trp Asn Gly Pro Tyr Arg Asp Asn Val Lys
 385 390 395 400
 Ala Phe Leu Asn Gly Asp Gln Asn Leu Ile Gly Thr Phe Ala Ser Arg
 405 410 415
 Ile Ser Gly Ser Gln Asp Ile Tyr Pro His Gly Ser Pro Thr Asn Ser
 420 425 430
 Ile Asn Tyr Val Ser Cys His Asp Gly Phe Thr Leu Cys Asp Thr Val
 435 440 445
 Thr Tyr Asn His Lys His Asn Glu Ala Asn Gly Glu Asp Asn Arg Asp
 450 455 460
 Gly Thr Asp Ala Asn Tyr Ser Tyr Asn Phe Gly Thr Glu Gly Lys Thr
 465 470 475 480
 Glu Asp Pro Gly Ile Leu Glu Val Arg Glu Arg Gln Leu Arg Asn Phe
 485 490 495
 Phe Leu Thr Leu Met Val Ser Gln Gly Ile Pro Met Ile Gln Ser Gly
 500 505 510
 Asp Glu Tyr Ala His Thr Ala Glu Gly Asn Asn Asn Arg Trp Ala Leu
 515 520 525
 Asp Ser Asn Ala Asn Tyr Phe Leu Trp Asp Gln Leu Thr Ala Lys Pro
 530 535 540
 Thr Leu Met His Phe Leu Cys Asp Leu Ile Ala Phe Arg Lys Lys Tyr
 545 550 555 560
 Lys Thr Leu Phe Asn Arg Gly Phe Leu Ser Asn Lys Glu Ile Ser Trp
 565 570 575
 Val Asp Ala Met Gly Asn Pro Met Thr Trp Arg Pro Gly Asn Phe Leu
 580 585 590
 Ala Phe Lys Ile Lys Ser Pro Lys Ala His Val Tyr Val Ala Phe His
 595 600 605
 Val Gly Ala Gln Asp Gln Leu Ala Thr Leu Pro Lys Ala Ser Ser Asn
 610 615 620
 Phe Leu Pro Tyr Gln Ile Val Ala Glu Ser Gln Gln Gly Phe Val Pro
 625 630 635 640
 Gln Asn Val Ala Thr Pro Thr Val Ser Leu Gln Pro His Thr Thr Leu
 645 650 655
 Ile Ala Ile Ser His Ala Lys Glu Val Thr
 660 665

 <210>410
 <211>312
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>410
 Thr Val Phe Asn Phe Lys Arg Phe Tyr Gln Lys Asp Ser Gln Arg Gln
 1 5 10 15
 Asn Gly Asn Thr Thr Cys Leu Arg Pro Phe Lys Lys Thr Cys Lys Glu
 20 25 30

Leu Ile Glu Phe Arg Arg Arg Thr Val Lys Leu Leu Lys Asn Val Leu
 35 40 45
 Leu Gly Leu Phe Phe Ser Met Ser Ile Ser Gly Phe Ser Glu Val Lys
 50 55 60
 Val Ser Asp Thr Phe Val Lys Gln Asp Thr Val Val Glu Pro Lys Ile
 65 70 75 80
 Arg Val Leu Leu Ser Asn Glu Ser Thr Thr Ala Leu Ile Glu Ala Lys
 85 90 95
 Gly Pro Tyr Arg Ile Tyr Gly Asp Asn Val Leu Leu Asp Thr Ala Ile
 100 105 110
 Gln Gly Gln Arg Cys Val Val His Ala Leu Tyr Glu Gly Ile Arg Trp
 115 120 125
 Gly Glu Phe Tyr Pro Gly Leu Gln Cys Leu Lys Ile Glu Pro Val Asp
 130 135 140
 Asp Thr Ala Ser Leu Phe Phe Asn Gly Ile Gln Tyr Gln Gly Ser Leu
 145 150 155 160
 Tyr Val His Arg Lys Asp Asn His Cys Ile Met Val Ser Asn Glu Val
 165 170 175
 Thr Ile Glu Asp Tyr Leu Lys Ser Val Leu Ser Ile Lys Tyr Leu Glu
 180 185 190
 Glu Leu Asp Lys Glu Ala Leu Ser Ala Cys Ile Ile Leu Glu Arg Thr
 195 200 205
 Ala Leu Tyr Glu Lys Leu Leu Ala Arg Asn Pro Gln Asn Phe Trp His
 210 215 220
 Val Lys Ala Glu Glu Glu Gly Tyr Ala Gly Phe Gly Val Thr Lys Gln
 225 230 235 240
 Phe Tyr Gly Val Glu Glu Ala Ile Asp Trp Thr Ala Arg Leu Val Val
 245 250 255
 Asp Ser Pro Gln Gly Leu Ile Ile Asp Ala Gln Gly Leu Leu Gln Ser
 260 265 270
 Asn Val Asp Arg Leu Ala Ile Glu Gly Phe Asn Ala Arg Gln Ile Leu
 275 280 285
 Glu Lys Phe Tyr Lys Asp Val Asp Phe Val Val Ile Glu Ser Trp Asn
 290 295 300
 Glu Glu Leu Asp Gly Glu Ile Arg
 305 310
 <210>411
 <211>337
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>411
 Met Thr His Gln Val Ala Val Leu His Gln Asp Lys Lys Phe Asp Val
 1 5 10 15
 Ser Leu Arg Pro Lys Gly Leu Glu Glu Phe Tyr Gly Gln His His Leu
 20 25 30
 Lys Glu Arg Leu Asp Leu Phe Leu Cys Ala Ala Leu Gln Arg Gly Glu
 35 40 45
 Val Pro Gly His Cys Leu Phe Phe Gly Pro Pro Gly Leu Gly Lys Thr
 50 55 60
 Ser Leu Ala His Ile Val Ala Tyr Thr Val Gly Lys Gly Leu Val Leu
 65 70 75 80
 Ala Ser Gly Pro Gln Leu Ile Lys Pro Ser Asp Leu Leu Gly Leu Leu
 85 90 95
 Thr Ser Leu Gln Glu Gly Asp Val Phe Phe Ile Asp Glu Ile His Arg
 100 105 110
 Met Gly Lys Val Ala Glu Glu Tyr Leu Tyr Ser Ala Met Glu Asp Phe
 115 120 125
 Lys Val Asp Ile Thr Ile Asp Ser Gly Pro Gly Ala Arg Ser Val Arg
 130 135 140
 Val Asp Leu Ala Pro Phe Thr Leu Val Gly Ala Thr Thr Arg Ser Gly
 145 150 155 160
 Met Leu Ser Glu Pro Leu Arg Thr Arg Phe Ala Phe Ser Ala Arg Leu
 165 170 175
 Ser Tyr Tyr Ser Asp Gln Asp Leu Lys Glu Ile Leu Val Arg Ser Ser

WO 99/27105

180 185 190
 His Leu Leu Gly Ile Glu Ala Asp Ser Ser Ala Leu Leu Glu Ile Ala
 195 200 205
 Lys Arg Ser Arg Gly Thr Pro Arg Leu Ala Asn His Leu Leu Arg Trp
 210 215 220
 Val Arg Asp Phe Ala Gln Ile Arg Glu Gly Asn Cys Ile Asn Gly Asp
 225 230 235 240
 Val Ala Glu Lys Ala Leu Ala Met Leu Leu Ile Asp Asp Trp Gly Leu
 245 250 255
 Asn Glu Ile Asp Ile Lys Leu Leu Thr Thr Ile Ile Asp Tyr Tyr Gln
 260 265 270
 Gly Gly Pro Val Gly Ile Lys Thr Leu Ser Val Ala Val Gly Glu Asp
 275 280 285
 Ile Lys Thr Leu Glu Asp Val Tyr Glu Pro Phe Leu Ile Leu Lys Gly
 290 295 300
 Phe Ile Lys Lys Thr Pro Arg Gly Arg Met Val Thr Gln Leu Ala Tyr
 305 310 315 320
 Asp His Leu Lys Arg His Ala Lys Asn Leu Ser Leu Gly Glu Gly
 325 330 335
 Gln

<210>412

<211>190

<212>PRT

<213>Chlamydia pneumoniae

<400>412

Met Ser Ile Lys Glu Asp Lys Trp Ile Arg Glu Met Ala Leu Asn Ala
 1 5 10 15
 Asp Met Ile His Pro Phe Val Asn Gly Gln Val Asn Val Asn Glu Glu
 20 25 30
 Thr Gly Glu Lys Leu Ile Ser Tyr Gly Leu Ser Ser Tyr Gly Tyr Asp
 35 40 45
 Leu Arg Leu Ser Arg Glu Phe Lys Val Phe Thr Asn Val Tyr Asn Ser
 50 55 60
 Val Val Asp Pro Lys Cys Phe Thr Glu Asp Ile Phe Ile Ser Ile Thr
 65 70 75 80
 Asp Asp Val Cys Ile Val Pro Pro Asn Ser Phe Ala Leu Ala Arg Ser
 85 90 95
 Val Glu Tyr Phe Arg Ile Pro Arg Asn Val Leu Thr Met Cys Ile Gly
 100 105 110
 Lys Ser Thr Tyr Ala Arg Cys Gly Ile Ile Val Asn Val Thr Pro Phe
 115 120 125
 Glu Pro Glu Trp Glu Gly His Val Thr Ile Glu Ile Ser Asn Thr Thr
 130 135 140
 Pro Leu Pro Ala Lys Ile Tyr Ala Asn Glu Gly Ile Ala Gln Val Leu
 145 150 155 160
 Phe Phe Glu Ser Ser Thr Thr Cys Glu Val Ser Tyr Ala Asp Arg Lys
 165 170 175
 Gly Lys Tyr Gln Lys Gln Gln Gly Ile Thr Val Pro Cys Val
 180 185 190

<210>413

<211>165

<212>PRT

<213>Chlamydia pneumoniae

<400>413

Lys Phe Leu Thr Leu Arg His Cys Gln Arg Lys Phe Thr Leu Met Lys
 1 5 10 15
 Gly Leu Pro Arg Ser Tyr Ser Leu Ser Leu Val Arg Pro Ala Arg Phe
 20 25 30
 Leu Met Gln Thr Glu Lys Glu Ser Ile Lys Ser Asn Lys Ala Ser Pro
 35 40 45
 Tyr Leu Val Ser Lys Val Ser Val Arg Lys Lys Asn Trp Gly Phe Arg
 50 55 60
 Leu Leu Glu Glu Val Met Ile Lys Ser Trp Trp Val Ile Phe Ser Ile

65 70 75 80
Leu Ile Gly Gly Phe Val Tyr Asp Arg Ala Ile Gln Glu Leu Arg Thr
85 90 95
Glu Glu Leu Arg Leu Gln Ser Lys Val Ser Ser Leu Cys Gln Asp Ile
100 105 110
Leu Ser Ala Gln Glu Lys Gln Arg Gln Leu Gln Leu His Leu Gln His
115 120 125
Trp Gln Asp Ser Ala Ala Ile Glu Ala Ala Leu Ile Gln Arg Leu Gly
130 135 140
Leu Ile Pro Lys Gly Tyr Lys Lys Leu Cys Val Ser Pro Lys Gln Gln
145 150 155 160
Ser Glu Asn Lys Asp 165

<210>414
<211>414
<212>PRT
<213>Chlamydia pneumoniae
<400>414
Lys Glu Thr Met Ile Pro Thr Met Leu Met Phe Phe Ile Ile Cys Phe
1 5 10 15
Thr Leu Cys Ser Gly Phe Ile Ser Leu Ser Gln Ile Ala Leu Phe Ser
20 25 30
Leu Pro Thr Ser Leu Ile Ser His Tyr Lys Arg Ser Lys Ser Lys Lys
35 40 45
Gln Gln Arg Val Ala Thr Leu Leu Leu His Pro His His Leu Leu Ile
50 55 60
Thr Leu Ile Phe Cys Asp Ile Gly Leu Asn Ile Ala Ile Gln Asn Cys
65 70 75 80
Phe Ala Ile Leu Phe Gly Asp Ala Ala Ser Trp Trp Phe Thr Val Gly
85 90 95
Leu Pro Leu Ala Ile Thr Leu Ile Leu Gly Glu Ile Leu Pro Lys Ala
100 105 110
Val Ala Leu Pro Phe Asn Thr Gln Ile Ala Ser Ser Val Ala Pro Leu
115 120 125
Ile Leu Cys Val Thr Lys Ile Phe Lys Pro Leu Leu His Trp Gly Ile
130 135 140
Val Gly Ile Asn Tyr Val Val Gln Trp Ile Leu Ser Lys Gln Gln Ile
145 150 155 160
Asp Ile Ile Gln Pro Gln Glu Leu Lys Glu Val Leu Gln Ser Cys Lys
165 170 175
Asp Phe Gly Val Val Asn Gln Glu Glu Ser Arg Leu Leu Tyr Gly Tyr
180 185 190
Leu Ser Leu Ser Asp Cys Ser Val Lys Glu Arg Met Gln Pro Arg Gln
195 200 205
Asp Ile Leu Phe Tyr Asp Ile Gln Thr Pro Leu Glu Asn Leu Tyr Leu
210 215 220
Leu Phe Ser Lys Gln His Cys Ser Arg Val Pro Ile Cys Asn Asp Asn
225 230 235 240
Leu Gln Asn Leu Leu Gly Ile Cys Thr Ala Arg Ser Leu Leu Leu His
245 250 255
Asp Lys Pro Leu Gln Ser Ser Asp Asp Leu Leu Pro Leu Leu Lys Lys
260 265 270
Pro Tyr Tyr Met Pro Glu Thr Ile Ser Ala Lys Met Ala Leu Cys Gln
275 280 285
Met Ala Ala Glu Asp Glu Thr Leu Gly Met Ile Ile Asp Glu Tyr Gly
290 295 300
Ser Ile Glu Gly Leu Ile Thr Gln Glu Asp Leu Phe Glu Ile Val Ala
305 310 315 320
Gly Glu Ile Val Asp Gln Arg Asp Asn Lys Ile Leu Tyr Thr Thr Ser
325 330 335
Gly Ala Asp Val Ile Ile Ala Ser Gly Thr Leu Glu Leu Arg Glu Phe
340 345 350
Ser Glu Ile Phe Asp Ile Asn Leu Pro Thr Asn Asn Asn Ile Ala Thr
355 360 365


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Ile Gly Gly Trp Leu Ile Glu Gln Ile Gly Thr Ile Pro Thr Thr Gly
   370           375           380
Met Lys Leu Ser Trp Asn Asn Leu Leu Phe Gln Val Leu Asp Ala Ala
385           390           395           400
Pro Asn Arg Ile Arg Arg Val Tyr Ile Arg Lys Leu Tyr Asp
      405           410

<210>415
<211>404
<212>PRT
<213>Chlamydia pneumoniae
<400>415
Met Thr Asn Ser Ala Leu Phe Trp Ile Gly Val Asn Ile Ile Cys Ile
 1           5           10           15
Val Leu Gln Gly Phe Tyr Ser Met Met Glu Met Ala Cys Val Ser Phe
      20           25           30
Asn Arg Val Arg Leu Gln Tyr Tyr Leu Thr Lys Asp His Lys Lys Ala
      35           40           45
Arg Tyr Ile Asn Phe Leu Ile Arg Arg Pro Tyr Arg Leu Phe Gly Thr
      50           55           60
Val Met Leu Gly Val Asn Ile Ala Leu Gln Val Gly Ser Glu Ser Ser
      65           70           75           80
Arg Asn Cys Tyr Arg Ala Leu Gly Ile Thr Pro Asp Tyr Ala Pro Phe
      85           90           95
Thr Gln Ile Phe Ile Val Val Ile Phe Ala Glu Leu Leu Pro Leu Thr
      100          105          110
Ile Ser Arg Lys Ile Pro Glu Lys Leu Ala Leu Trp Gly Ala Pro Ile
      115          120          125
Leu Tyr Tyr Ser His Tyr Ile Phe Tyr Pro Leu Ile Gln Leu Ile Gly
      130          135          140
Ser Leu Thr Glu Gly Leu Tyr Tyr Leu Leu Asn Ile Arg Lys Glu Lys
145          150          155          160
Leu Asn Ser Thr Leu Ser Arg Asp Glu Phe Gln Lys Ala Leu Glu Thr
      165          170          175
His His Glu Glu Gln Asp Phe Asn Thr Ile Ala Thr Asn Ile Phe Ser
      180          185          190
Leu Ser Ala Thr Cys Ala Asp Gln Val Cys Gln Pro Leu Glu Gln Val
      195          200          205
Thr Met Leu Pro Ser Ser Ala Asn Val Lys Asp Phe Cys Arg Thr Ile
      210          215          220
Lys Asn Thr Asp Ile Asn Phe Ile Pro Val Tyr His Lys Ala Arg Lys
225          230          235          240
Asn Val Ile Gly Ile Ala His Pro Lys Asp Phe Val Asn Lys Ala Leu
      245          250          255
Asp Glu Pro Leu Ile Asn Asn Leu His Ser Pro Trp Phe Ile Thr Ala
      260          265          270
Lys Ser Lys Leu Ile Arg Ile Leu Lys Glu Phe Arg Asp Asn Arg Ser
      275          280          285
Ser Val Ala Val Val Leu Asn Ala Ser Gly Glu Pro Ile Gly Ile Leu
      290          295          300
Ser Leu Asn Ala Ile Phe Lys Ile Leu Phe Asn Thr Thr Asn Ile Ala
305          310          315          320
His Leu Lys Pro Lys Thr Ile Ser Val Ile Glu Arg Thr Phe Pro Gly
      325          330          335
Asn Ser Arg Ile Lys Asp Leu Gln Lys Glu Leu Asp Ile Gln Phe Pro
      340          345          350
Gln Tyr Pro Val Glu Thr Leu Ala Gln Leu Val Leu Gln Leu Leu Asp
      355          360          365
Ser Pro Ala Glu Val Gly Thr Ser Val Ile Ile Asn Asn Leu Leu Leu
      370          375          380
Glu Val Lys Glu Met Ser Leu Ser Gly Ile Lys Thr Val Ser Ile Lys
385          390          395          400
Asn Leu Leu Ser

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<210>416

<211>373

<212>PRT

<213>Chlamydia pneumoniae

<400>416

Tyr Ser Met Ile Tyr Leu Asp Asn Asn Ala Met Thr Pro Pro Glu Arg
 1 5 10 15
 Gly Leu Leu Glu Phe Leu Gln Lys Thr Phe Leu Ile Glu Gly Thr Tyr
 20 25 30
 Ala Asn Pro Ser Ser Val His Gln Leu Gly Lys Lys Ser Arg Gln Leu
 35 40 45
 Val Leu Glu Ala Ser His Trp Met Gln Lys Val Leu Ser Phe Gln Gly
 50 55 60
 Arg Val Leu Tyr Thr Ser Gly Ala Thr Glu Ser Leu Asn Leu Ala Ile
 65 70 75 80
 Ala Ser Leu Pro Lys Asp Ser His Val Ile Thr Ser Gly Ser Glu His
 85 90 95
 Pro Ala Ile Leu Glu Pro Leu Lys His Ser Ser Leu Ser Val Ser Tyr
 100 105 110
 Leu Asn Pro Glu Glu Gly Arg Cys Val Leu Thr Ile Glu Gln Ile Glu
 115 120 125
 Arg Ala Val Thr Pro Lys Thr Ser Ala Ile Ile Leu Gly Trp Val Asn
 130 135 140
 Ser Glu Thr Gly Ala Lys Ala Asp Ile Ala Ala Ile Ala His Phe Ala
 145 150 155 160
 Gln Glu Arg Gln Leu Gln Phe Ile Val Asp Ala Thr Ala Asn Val Gly
 165 170 175
 Lys Glu Arg Ile Val Leu Pro Ser Gly Val Thr Met Ala Ala Phe Ser
 180 185 190
 Gly His Lys Phe His Ala Leu Ser Gly Ile Gly Ala Leu Val Ser
 195 200 205
 Pro Gly Val Lys Leu His Pro Gln Leu Trp Gly Gly Gly Gln Gln Gly
 210 215 220
 Gly Leu Arg Ala Gly Thr Glu Asn Leu Trp Gly Ile Ala Ser Leu Leu
 225 230 235 240
 Tyr Ile Phe Lys Tyr Leu Asp Leu His Gln Glu Arg Ile Ser Gln Glu
 245 250 255
 Ile Leu Thr His Arg Asn Gly Phe Glu Lys Ala Ile Lys Ala Arg Ile
 260 265 270
 Pro Asp Val His Ile His Cys Ala Asp Gln Pro Arg Ala Asn Asn Val
 275 280 285
 Ser Ala Ile Ala Phe Pro Pro Leu Glu Gly Glu Val Leu Gln Ile Ala
 290 295 300
 Leu Asp Ile Glu Gly Val Ala Cys Gly Tyr Gly Ser Ala Cys Ser Ser
 305 310 315 320
 Gly Ala Thr Ala Pro Phe Lys Ser Leu Val Ser Met Gly Val Asp Glu
 325 330 335
 Glu Leu Thr Leu Ala Thr Leu Arg Phe Ser Phe Ser His Leu Leu Leu
 340 345 350
 Gln Glu Asp Val Glu Arg Ala Val Gly Ile Ile Glu Lys Val Val Glu
 355 360 365
 Arg Leu Lys Asn Ser
 370

<210>417

<211>248

<212>PRT

<213>Chlamydia pneumoniae

<400>417

Glu His Phe Val Asp Phe Asp Tyr Phe Gly Leu Ser Asp Ile Gly Arg
 1 5 10 15
 Val Arg Ala Arg Asn Glu Asp Phe Trp Gln Val Asn Leu Met Ser Gln
 20 25 30
 Val Val Ala Ile Ala Asp Gly Val Gly Gly Arg Leu Gly Gly Asp Ile
 35 40 45
 Ala Ser Gln Glu Ala Val Thr Ser Leu Met Glu Leu Ile Asp Glu Gln

50 55 60
 Gln Ser Lys Leu Met Gly Tyr Glu Asp Asp Gln Tyr Lys Glu Thr Leu
 65 70 75 80
 Lys Lys Ile Leu Leu Glu Val Asn Gly Val Val Tyr Glu His Gly Gln
 85 90 95
 Met Glu Glu His Leu Gln Gly Met Gly Thr Thr Leu Ser Phe Ile Gln
 100 105 110
 Phe Arg Lys Asp Arg Ala Trp Leu Phe His Val Gly Asp Ser Arg Ile
 115 120 125
 Tyr Arg Ile Arg Glu Gly Glu Leu Arg Arg Leu Thr Glu Asp His Ser
 130 135 140
 Leu Glu Asn Gln Leu Lys Asn Arg Tyr Gly Leu Pro Lys Gln Ser Asp
 145 150 155 160
 Lys Val Tyr Ser Tyr Arg His Ile Leu Thr Asn Val Leu Gly Ser Arg
 165 170 175
 Pro Tyr Val Met Pro Asp Ile Arg Asn Leu Pro Cys Glu Lys Glu Asp
 180 185 190
 Leu Tyr Cys Leu Cys Ser Asp Gly Leu Thr Asn Met Val Pro Asp Ile
 195 200 205
 Asp Ile Arg Asp Ile Leu Asn Gln Pro Ala Thr Leu Glu Glu Arg Gly
 210 215 220
 Asn Ala Leu Ile Ser Leu Ala Asn Thr Arg Gly Gly Asp Asp Asn Ala
 225 230 235 240
 Thr Val Val Leu Val Arg Ile Gln
 245

<210>418

<211>255

<212>PRT

<213>Chlamydia pneumoniae

<400>418

Tyr Lys Leu Met Arg Val Leu Asn Gly Lys Ser Leu Asn Cys Glu Ser
 1 5 10 15
 Ile Asp Leu Lys Ser Lys Asn Phe Pro Arg Ala Arg Ile Phe Cys Lys
 20 25 30
 Ile Ser Asn Leu Arg Thr Val Thr Met Arg Lys Met Leu Val Leu Leu
 35 40 45
 Ala Ser Leu Gly Leu Leu Ser Pro Thr Leu Ser Ser Cys Thr His Leu
 50 55 60
 Gly Ser Ser Gly Ser Tyr His Pro Lys Leu Tyr Thr Ser Gly Ser Lys
 65 70 75 80
 Thr Lys Gly Val Ile Ala Met Leu Pro Val Phe His Arg Pro Gly Lys
 85 90 95
 Ser Leu Glu Pro Leu Pro Trp Asn Leu Gln Gly Glu Phe Thr Glu Glu
 100 105 110
 Ile Ser Lys Arg Phe Tyr Ala Ser Glu Lys Val Phe Leu Ile Lys His
 115 120 125
 Asn Ala Ser Pro Gln Thr Val Ser Gln Phe Tyr Ala Pro Ile Ala Asn
 130 135 140
 Arg Leu Pro Glu Thr Ile Ile Glu Gln Phe Leu Pro Ala Glu Phe Ile
 145 150 155 160
 Val Ala Thr Glu Leu Leu Glu Gln Lys Thr Gly Lys Glu Ala Gly Val
 165 170 175
 Asp Ser Val Thr Ala Ser Val Arg Val Arg Val Phe Asp Ile Arg His
 180 185 190
 His Lys Ile Ala Leu Ile Tyr Gln Glu Ile Ile Glu Cys Ser Gln Pro
 195 200 205
 Leu Thr Thr Leu Val Asn Asp Tyr His Arg Tyr Gly Trp Asn Ser Lys
 210 215 220
 His Phe Asp Ser Thr Pro Met Gly Leu Met His Ser Arg Leu Phe Arg
 225 230 235 240
 Glu Val Val Ala Arg Val Glu Gly Tyr Val Cys Ala Asn Tyr Ser
 245 250 255

<210>419

<211>231

<212>PRT

<213>Chlamydia pneumoniae

<400>419

Gly Asn Val Gln Val Tyr Ser Ser Leu Val Pro Trp Arg Arg Cys Ser
 1 5 10 15
 Ser Phe Gln Lys Leu Leu Tyr Leu Ala Ser Thr Leu Trp Glu Asn Thr
 20 25 30
 Phe Lys Xaa Arg Gln Val Leu Phe Gly Gly Ala Leu Leu Val Phe Ser
 35 40 45
 Ser Leu Val Ala Leu Ser Val Ser Ser Gln Thr Ala Glu Leu Leu Ser
 50 55 60
 Thr Met Thr Gly Ile Ser Leu Ala Phe Ala Phe Leu Phe Tyr Leu Xaa
 65 70 75 80
 Phe Leu Pro Lys Asp Ile Thr Arg Ala Ile Leu Phe Ser Gly Glu Arg
 85 90 95
 Xaa Val Lys Thr Ser Trp Arg Ala Leu Gly Ser Ala Ile Arg Met Trp
 100 105 110
 Ile Ile Ile Ile Pro Val Thr Gln Leu Ile Gly Ile Met Met Ser Lys
 115 120 125
 Phe Ile Thr Leu Val Leu Pro Thr Gln Glu Ile His Thr Gln Glu Val
 130 135 140
 Thr Gln Glu Val Gln Asn Ser Leu Pro Ile Thr Gly His Tyr Ile Ser
 145 150 155 160
 Met Ile Leu Asn Leu Gly Val Leu Thr Pro Phe Gly Glu Glu Val Phe
 165 170 175
 Phe Arg Gly Ile Leu Gln Thr Phe Leu Lys Asn Lys Met Thr Arg Ile
 180 185 190
 Ala Ala Val Leu Cys Ser Ser Ile Ile Phe Ser Phe Ile His Ile Glu
 195 200 205
 His Ser Leu Gly Ser Trp Val Phe Cys Pro Arg Ala Leu Cys Phe Ser
 210 215 220
 Leu Ile Cys Arg Val Ser Ile
 225 230

<210>420

<211>130

<212>PRT

<213>Chlamydia pneumoniae

<400>420

Met Arg Asp His Ala Phe Ser Lys Leu Ile Gly Thr Val Arg Ala Met
 1 5 10 15
 Val Val Glu Gly Arg Cys Pro Trp Ser Leu Gln Gln Ser Leu Val Ser
 20 25 30
 Met Val Glu His Ile Leu Gly Glu Cys Gln Glu Phe His Glu Ala Val
 35 40 45
 Leu Gln Gly Lys Thr Val Gln Glu Val Gly Ser Glu Ala Gly Asp Val
 50 55 60
 Leu Thr Leu Val Leu Ile Leu Cys Phe Leu Leu Glu Arg Glu Gly Val
 65 70 75 80
 Leu Ala Ser Glu Asp Val Ala Asn Glu Ala Met Glu Lys Leu Arg Arg
 85 90 95
 Arg Ala Pro Tyr Ile Phe Ala Glu Asp Tyr Lys Pro Val Ser Ile Glu
 100 105 110
 Glu Ala Asp Arg Leu Trp Glu Leu Ala Lys His Arg Glu Lys Asn Glu
 115 120 125
 Ser Thr
 130

<210>421

<211>375

<212>PRT

<213>Chlamydia pneumoniae

<400>421

Asn Phe Lys Arg Phe Cys Met Thr Lys Ile Ala Phe Ser Glu Lys Ala
 1 5 10 15
 Lys Asn Phe Pro Val Glu Ala Leu Lys Lys Trp Phe Glu Lys Asn Lys

20 25 30
 Arg Ser Leu Pro Trp Arg Asp Asn Pro Thr Pro Tyr Ser Val Trp Val
 35 40 45
 Ser Glu Val Met Leu Gln Gln Thr Arg Ala Glu Val Val Ile Asp Tyr
 50 55 60
 Phe Asn Gln Trp Met Glu Arg Phe Pro Thr Ile Glu Ser Leu Ala Ala
 65 70 75 80
 Ala Lys Glu Glu Asp Val Ile Lys Leu Trp Glu Gly Leu Gly Tyr Tyr
 85 90 95
 Ser Arg Ala Arg His Leu Leu Glu Gly Ala Arg Met Val Met Glu Glu
 100 105 110
 Phe His Gly Lys Ile Pro Asp Asp Ala Ile Ser Leu Ala Gln Ile Arg
 115 120 125
 Gly Val Gly Pro Tyr Thr Val His Ala Ile Leu Ala Phe Ala Phe Lys
 130 135 140
 Arg Arg Ala Ala Ala Val Asp Gly Asn Val Leu Arg Val Leu Ser Arg
 145 150 155 160
 Ile Phe Leu Ile Glu Thr Ser Ile Asp Leu Glu Ser Thr Arg Thr Trp
 165 170 175
 Val Ser Arg Ile Ala Gln Ala Leu Leu Pro His Lys Ser Pro Glu Val
 180 185 190
 Ile Ala Glu Ala Leu Ile Glu Leu Gly Ala Cys Ile Cys Lys Lys Val
 195 200 205
 Pro Gln Cys His Arg Cys Pro Val Arg Gln Ala Cys Gly Ala Trp Arg
 210 215 220
 Glu Asn Lys Gln Phe Val Leu Pro Val Arg His Ala Arg Lys Lys Val
 225 230 235 240
 Ile Phe Leu His Arg Leu Val Ala Ile Val Leu Tyr Asp Gly Ser Leu
 245 250 255
 Val Val Glu Lys Arg Arg Pro Lys Glu Met Met Ala Gly Leu Tyr Glu
 260 265 270
 Phe Pro Tyr Ile Glu Val Glu Pro Glu Glu Gly Leu Gln Asp Ile Glu
 275 280 285
 Gly Phe Thr Lys Lys Met Glu Leu Ser Leu Glu Ser Pro Leu Glu Phe
 290 295 300
 Leu Gly Asn Leu Lys Glu Gln Arg His Ala Phe Thr Asn His Lys Val
 305 310 315 320
 His Leu Cys Pro Ile Ile Phe Lys Ala Thr Ser Leu Pro Gln Phe Gly
 325 330 335
 Glu Leu His Leu Leu Ser Asp Ile Asp His Leu Ala Phe Ser Ser Gly
 340 345 350
 His Lys Lys Ile Lys Asp Ala Leu Leu Ile Tyr Leu Gly Asp Val Arg
 355 360 365
 Ser Arg Glu Ser Ile Gly Val
 370 375

<210>422

<211>234

<212>PRT

<213>Chlamydia pneumoniae

<400>422

Asn Phe Met Gln Leu Ser Asn Asp Lys Arg Ala Ala Leu Gln Tyr Phe
 1 5 10 15
 Met Glu Asn Phe Ser Trp Leu Ala Thr Gln Val Ser Arg Leu Ser Ser
 20 25 30
 Phe Leu Arg Ser Gln Leu Pro Asn His Ser Lys Gln Glu Ile Leu Ala
 35 40 45
 Ser Ile Arg Gln His Arg Cys Arg Val Asn Gly Phe Ile Glu Arg Phe
 50 55 60
 Glu Ser Tyr Lys Val Gln Pro Gly Asp Arg Val Ser Leu Ser Leu Ile
 65 70 75 80
 Pro Ser Thr Lys Gln Gln Pro Ser Ile Leu Trp Glu Asp Asp Tyr Ser
 85 90 95
 Ile Ile Tyr Glu Lys Pro Pro His Leu Thr Thr Glu Gln Met Ala His
 100 105 110

Met Thr Arg Phe Phe Thr Val His Arg Leu Asp Lys Gly Thr Ser Gly
 115 120 125
 Cys Leu Leu Met Gly Lys Ser Lys Gln Ala Ala Thr Glu Leu Met Lys
 130 135 140
 Leu Phe Lys Gln Arg Lys Ile His Lys Gln Tyr Ile Ala Phe Val Phe
 145 150 155 160
 Gly His Pro Lys Lys Lys Phe Gly Thr Val Lys Ser Tyr Thr Ala Pro
 165 170 175
 Val Tyr Arg Arg Cys Gly Ala Val Ile Phe Gly Ala Ala Gly Pro Ser
 180 185 190
 Gln Gly Glu Pro Ile Lys Ser Ala Tyr Lys Trp Asp Cys Trp Val Ile
 195 200 205
 Leu Leu Ser Glu Met Ser Thr Thr Asp Leu Lys Asn Ser Leu Pro Arg
 210 215 220
 Ser Ser Ala Leu Ser Ser Met Leu Thr Pro
 225 230
 <210>423
 <211>364
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>423
 Glu Leu Glu Ala Leu Glu Gln Lys Tyr Gly Lys Ala Val Leu Leu Ile
 1 5 10 15
 Ala Leu Ser Glu Leu Gly Ile Asp Thr Met Ser Leu Leu Ser Gly His
 20 25 30
 Arg Leu Glu Gly Phe Pro Pro Ile Ala Glu Val Met Ala Ala Cys Asp
 35 40 45
 Arg Cys Ser Met Asp Phe Cys Glu Ile Leu Lys Ser Gln Ser Met Asp
 50 55 60
 Leu Trp Ala Asp Ala Ala Ser Cys Val Asp Gly Leu Leu Gln Asp Pro
 65 70 75 80
 Phe Trp Ser Thr Ala Ile Ala Ser Gly Ile Ala Lys Ser Ser Leu Gln
 85 90 95
 Glu Thr Glu Phe Glu Cys Glu Ser Lys Val Met Val Leu Ser Ser Trp
 100 105 110
 Gly Glu Gln Gly Ala Gln Val Cys Ser Pro Phe Asn Leu Glu Arg Ile
 115 120 125
 Cys Met Ser Phe Pro Ser Leu Lys Val Phe Ser Leu Lys Lys Asn Gly
 130 135 140
 Cys Glu Asn Met Gly Ile Gln Leu Ser Ala Ser Cys Met Asn Leu Leu
 145 150 155 160
 Met Ser Ile Phe Phe Val Ala Thr Asn Gly Gly Ser Thr Pro Ile Trp
 165 170 175
 Ile Thr Lys Glu Asn Leu Met Ala Leu Val Ala Leu Val Leu Ser His
 180 185 190
 Tyr Gln Cys Tyr Phe Val Pro Ala Thr Gly Asp Pro Gln Arg Gly Asn
 195 200 205
 Ile Leu Gly Asn Pro Glu Val Asn Ala Ile Leu Ala Arg Gly Met Gly
 210 215 220
 Met Arg Val Asp Leu Glu Arg Lys Arg Gly Gly Glu Ser Ser Ser Ser
 225 230 235 240
 Arg Tyr Leu Glu Leu Ala Ala Arg Cys Phe Glu Asn Ser Leu Thr Lys
 245 250 255
 Thr Ser Leu Leu Ser Asp Ala Asn Asn Val Gln Glu Arg Asp Lys Cys
 260 265 270
 Leu Leu Gln Met Ser Thr Ser Leu Met His Thr Ala Gly Leu Asn Leu
 275 280 285
 Gln Arg Pro Pro Val Pro Thr Pro Ser Gly Val Thr Ala His Pro Gln
 290 295 300
 Pro Gln Pro Asp Pro Val Val Thr Ser Gln Pro Ser Leu Leu Gly Ala
 305 310 315 320
 Arg Glu Arg Ser Pro Val Ser Ser Arg Gly Arg Phe Pro Val Val Leu
 325 330 335
 Pro Leu Ser Val Ile Ser Pro Arg Ser His Pro Gly Arg Val Glu Arg

340 345 350
 Arg Asp Leu Glu Asp Glu Glu Glu Glu Val Met Phe
 355 360
 <210>424
 <211>283
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>424
 Asn Ile Gln Thr Ser His Ser Arg Val Leu Leu Lys Lys Phe Ser Lys
 1 5 10 15
 Glu Phe Thr Ile Arg Thr Tyr Arg Ser Leu Gly Phe Thr Asp Tyr Leu
 20 25 30
 Gly Gly Cys Leu Thr Asn Pro Leu Gly Lys Phe Pro Ser Pro Gln Asn
 35 40 45
 Pro Gln Val Val Thr Ile Ala Pro Ser Ser Thr Thr Pro Gln Ala Val
 50 55 60
 Ser Ser Ala Val Gln Gly Phe Leu Gln Thr Gly Gly Ala Ala Ser Ser
 65 70 75 80
 Thr Ala Thr Thr Thr Thr Ala Ser Gly Ala Ser Ala Leu Gly Leu Ser
 85 90 95
 Pro Asp Gln Val Gln Ala Leu Leu Thr Asn Leu Leu Asn Val Gly Gln
 100 105 110
 Pro Ser Val Gly Gln Pro Ser Thr Ser Ala Gly Thr Ser Gly Ala Ser
 115 120 125
 Ser Ser Ser Ala Ser Met Gln Gln Gln Leu Leu Gln Leu Ile Leu Asp
 130 135 140
 Lys Thr Thr Gly Ser Gly Gly Ser Ser Val Ser Ser Glu Gln Leu Gln
 145 150 155 160
 Gln Leu Leu Ser Leu Val Ser Gln Met Thr Thr Ser Gln Gly Gly Ser
 165 170 175
 Gly Gly Thr Gln Ala Gly Gln Ala Ala Ser Val Leu Leu Asn Leu Leu
 180 185 190
 Ser Ala Thr Gly Ser Ala Ala Ala Asn Pro Leu Gly Thr Ala Ala Ser
 195 200 205
 Leu Ala Gln Ile Ile Tyr Ala Ala Val Thr Ser Pro Gly Ala Lys Lys
 210 215 220
 Thr Ser Glu Phe Cys Tyr Asn Tyr Cys Gly Glu Thr Cys Gln Gly Asn
 225 230 235 240
 Cys Gly Cys Pro Thr Cys Gly Cys Pro Asp Gly Gln Cys Gly Cys Gly
 245 250 255
 Gly Phe Gly Arg Phe Phe Cys Gly Val Trp Lys Asn Cys Cys Gly Ile
 260 265 270
 Gly Glu Gly Ser Gln Glu Pro Ala Ile Pro Leu
 275 280
 <210>425
 <211>302
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>425
 Gly Gly Phe Met Leu Lys Ile Asp Leu Thr Gly Lys Val Ala Phe Val
 1 5 10 15
 Ala Gly Ile Gly Asp Asp Gln Gly Tyr Gly Trp Gly Ile Ala Lys Leu
 20 25 30
 Leu Ala Glu Ala Gly Ala Thr Ile Ile Val Gly Thr Trp Val Pro Ile
 35 40 45
 Tyr Lys Ile Phe Ser Gln Ser Trp Glu Leu Gly Lys Phe Asn Glu Ser
 50 55 60
 Arg Lys Leu Ser Asn Gly Thr Leu Leu Glu Ile Ala Lys Ile Tyr Pro
 65 70 75 80
 Met Asp Ala Ser Phe Asp Ser Pro Glu Asp Val Pro Glu Asp Ile Ala
 85 90 95
 Glu Asn Lys Arg Tyr Lys Gly Ile Thr Gly Phe Thr Ile Ser Glu Val
 100 105 110
 Ala Glu Gln Val Lys Lys Asp Phe Gly His Ile Asp Ile Leu Val His

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      115      120      125
Ser Leu Ala Asn Ser Pro Glu Ile Ser Lys Ser Leu Leu Glu Thr Ser
      130      135      140
Arg Lys Gly Tyr Leu Ala Ala Leu Ser Ala Ser Ser Tyr Ser Phe Val
145      150      155      160
Ser Leu Leu Ser His Phe Gly Ser Ile Met Asn Arg Gly Gly Ser Thr
      165      170      175
Ile Ser Leu Thr Tyr Leu Ala Ser Met Arg Ala Val Pro Gly Tyr Gly
      180      185      190
Gly Gly Met Ser Ser Ala Lys Ala Ala Leu Glu Ser Asp Thr Lys Thr
      195      200      205
Leu Ala Trp Glu Ala Gly Arg Arg Trp Gly Ile Arg Val Asn Thr Ile
210      215      220
Ser Ala Gly Pro Leu Ala Ser Arg Ala Gly Lys Ala Ile Gly Phe Ile
225      230      235      240
Glu Arg Met Val Asp Tyr Tyr Gln Glu Trp Ala Pro Ile Pro Glu Ala
      245      250      255
Met Asn Ala Glu Gln Val Gly Ala Val Ala Ala Phe Leu Ala Ser Pro
      260      265      270
Leu Ala Ser Ala Ile Thr Gly Glu Thr Leu Tyr Val Asp His Gly Ala
275      280      285
Asn Val Met Gly Ile Gly Pro Glu Met Phe Pro Lys Asp Ser
290      295      300
<210>426
<211>300
<212>PRT
<213>Chlamydia pneumoniae
<400>426
Asn Tyr Gly Asp Ala Met Glu Lys Leu Leu Val Thr Asp Ile Asp Gly
1      5      10      15
Thr Ile Thr His Gln Ser His His Leu Asp Lys Lys Val Tyr Glu Arg
      20      25      30
Leu Tyr Ala Leu His Gln Ala Gly Trp Lys Leu Phe Phe Leu Thr Gly
      35      40      45
Arg Tyr Tyr Lys Tyr Ala Ala Arg Leu Phe Ser Asp Phe Asp Ala Pro
50      55      60
Tyr Leu Leu Gly Cys Gln Asn Gly Ala Ser Val Trp Ser Ser Thr Ser
65      70      75      80
Ser Asn Leu Leu Tyr Ser Lys Ser Leu Pro Ser Asp Leu Leu Cys Ile
      85      90      95
Leu Gln Asp Cys Met Glu Gly Ala Thr Ala Leu Phe Ser Val Glu Ser
      100      105      110
Gly Ala Pro Tyr Gly Asp His Tyr Tyr Arg Phe Ser Pro Thr Pro Ile
      115      120      125
Ala Gln Asp Leu His Glu Tyr Val Asp Pro Arg Tyr Phe Pro Asn Ala
130      135      140
Lys Glu Arg Glu Ile Leu Phe Glu Thr Arg Ser Leu Lys Asp Asp Tyr
145      150      155      160
Ala Phe Pro Ser Phe Ala Ala Ala Lys Val Phe Gly Leu Arg Asp Glu
      165      170      175
Val Ile Arg Ile Gln Lys Glu Leu Glu Arg Gln Glu Ala Leu Thr Ser
      180      185      190
Val Ala Thr Met Thr Leu Met Arg Trp Pro Phe Asp Phe Arg Tyr Ala
195      200      205
Ile Leu Phe Leu Thr Asp Lys Ser Val Ser Lys Gly Lys Ala Leu Asp
210      215      220
Arg Val Val Asn Ile Leu Tyr Asp Gly Lys Lys Pro Phe Val Met Ala
225      230      235      240
Ser Gly Asp Asp Ala Asn Asp Leu Asp Leu Ile Glu Arg Gly Asp Phe
      245      250      255
Lys Ile Val Met Ser Ser Ala Pro Glu Glu Met His Val His Ala Asp
260      265      270
Phe Leu Ala Pro Pro Ala Asp Lys Asn Gly Ile Leu Ser Ala Trp Glu
275      280      285

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Ala Gly Val Arg Tyr Tyr Asp Asp Leu Met Ser Leu
 290 295 300
 <210>427
 <211>164
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>427
 Ser Arg Val Leu His Met Phe Phe Asn Leu Phe Ser Leu Val Phe Lys
 1 5 10 15
 Leu Ser Asp Glu Leu Ala Leu Ala Glu Thr Ile Gln Glu Pro Ile Ser
 20 25 30
 Val His Glu Met Phe Pro Gly Ser Met Lys Leu Glu Met Phe Lys Met
 35 40 45
 Leu Gly Ser Leu Ile Leu Leu Thr Ile Phe Gly Phe Gly Val Trp
 50 55 60
 Ala Phe Lys Lys Phe Val Arg Ser Arg Ser His Gly Phe Gly Gly Ser
 65 70 75 80
 Ser Gln Ile Lys Ile Leu Glu Arg Arg Ser Leu Thr Pro Lys Thr Ser
 85 90 95
 Ile Tyr Leu Ile Arg Val Val Asn Lys Thr Leu Val Ile Ala Glu Thr
 100 105 110
 Pro Glu Lys Ile Thr Leu Leu Thr Glu Phe Pro Pro Asp Thr Asp Ile
 115 120 125
 Asn His Leu Leu Gln Glu Asn Asn Lys Gln Ser Ser Ser Ser Ala Thr
 130 135 140
 Ser Asp Phe Leu Ser Lys Ala Ile Gln Lys Ile Gln Lys Lys Gln Gln
 145 150 155 160
 Thr Asn Gln Asp

<210>428
 <211>161
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>428
 Met Thr Thr Trp Thr Leu Asn Gln Asn Asn Leu Thr Lys Phe Leu Lys
 1 5 10 15
 Ser Ser Asp Glu Glu Pro Phe Leu Glu Arg Glu Ser Gly Leu Thr Tyr
 20 25 30
 Ile Asn Ile Gln Ala Asn Gly Asn Glu Leu Pro Leu Phe Phe Val Ile
 35 40 45
 Arg Ser Glu Gly Glu Ile Leu Gln Leu Ile Cys Tyr Leu Pro Tyr Gln
 50 55 60
 Leu His Glu Ser His Lys Ala Ser Thr Ala Arg Leu Leu His Leu Leu
 65 70 75 80
 Asn Arg Asp Ile Asp Ile Pro Gly Phe Gly Met Asp Glu Glu Gln Gly
 85 90 95
 Leu Ile Phe Tyr Arg Leu Val Leu Pro Cys Leu Asn Gly Glu Ile His
 100 105 110
 Asp Thr Leu Leu Arg Ile Tyr Ile Asp Thr Ile Lys Leu Val Cys Asp
 115 120 125
 Ser Phe Ser His Ala Ile Gly Leu Ile Ser Ser Gly Asn Met Asn Leu
 130 135 140
 Asp Glu Leu Arg Arg Gln Ala Leu Gln Glu Gln Gln Glu Lys Arg Asn
 145 150 155 160
 Glu

<210>429
 <211>249
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>429
 Asp Val Arg Leu Phe Lys Ser Asn Lys Lys Asn Val Met Ser Ser Gln
 1 5 10 15
 Thr Met Asp Val Leu Ile Phe Tyr Asp Thr Glu Thr Thr Gly Thr Gln

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      20      25      30
Ile Glu Arg Asp Arg Ile Ile Glu Ile Ala Ala Tyr Asn Ser Val Thr
      35      40      45
Asp Glu Ser Phe Leu Thr Tyr Val Asn Pro Glu Ile Pro Ile Pro Asp
      50      55      60
Glu Ala Ser Lys Ile His Gly Ile Thr Thr Asp Ala Val Leu Ser Ala
      65      70      75      80
Pro Lys Phe Pro Glu Ala Tyr Glu Gly Phe Arg Lys Phe Cys Gly Glu
      85      90      95
Asp Ser Ile Leu Val Ala His Asn Asn Asp Gly Phe Asp Phe Pro Leu
      100      105      110
Leu Gly Lys Glu Cys Arg Arg His Ser Leu Glu Pro Leu Thr Asn Arg
      115      120      125
Thr Ile Asp Ser Leu Lys Trp Ala Gln Lys Tyr Arg Pro Asp Leu Pro
      130      135      140
Lys His Asn Leu Gln Tyr Leu Arg Gln Val Tyr Gly Phe Ala Glu Asn
      145      150      155      160
Gln Ala His Arg Ala Leu Asp Asp Val Val Ile Leu His Lys Val Phe
      165      170      175
Thr Ser Leu Ile Gly Asp Leu Pro Pro Gln Gln Val Leu Asp Leu Leu
      180      185      190
Gln Gln Ser Tyr His Pro Lys Val Phe Lys Met Pro Phe Gly Lys Tyr
      195      200      205
Lys Gly Gln Pro Leu Val Asp Ile Pro Lys Ser Tyr Phe Glu Trp Leu
      210      215      220
Glu Asn Gln Gly Ala Leu Asp Lys Pro Glu Asn Lys Asp Ile Lys Ala
      225      230      235      240
Ala Ile Ala Leu Leu His Gln Pro Thr
      245

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<210>430

<211>259

<212>PRT

<213>Chlamydia pneumoniae

<400>430

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Met Ile Leu Thr Ala Ala Phe Ser Pro Cys Pro Asn Asp Ile Phe Leu
      1      5      10      15
Phe Arg Ser Phe Leu Lys Asp Pro Gln Phe Arg Pro Leu Leu Asn Gln
      20      25      30
Val Thr Ile Ala Asp Ile Glu Thr Leu Asn Thr Leu Ala Leu Gln Arg
      35      40      45
Arg Leu Ser Leu Met Lys Met Ser Ala Ala Leu Phe Pro Leu Val Ser
      50      55      60
Asp Tyr Tyr Asn Leu Met Asp Val Gly Asn Thr Leu Gly Tyr Asn Ser
      65      70      75      80
Gly Pro Ile Val Leu Ser Leu Asp Pro Glu Cys Ser Leu Asp Thr Leu
      85      90      95
Ala Thr Pro Gly Glu Met Thr Thr Ala His Ala Leu Cys Lys Leu Tyr
      100      105      110
Tyr Pro Lys Ala Lys Leu Ile Pro Met Pro Tyr Asp Lys Ile Leu Ser
      115      120      125
Ala Ile Leu Gln Gly Lys Val Asp Gly Gly Ala Leu Ile His Glu Glu
      130      135      140
Arg Phe Ser Tyr Asp Leu Gln Leu Thr Leu Arg Ala Asp Phe Gly Glu
      145      150      155      160
Leu Trp Arg Arg Lys Thr Ile Phe Pro Leu Pro Leu Gly Cys Leu Ala
      165      170      175
Ile Ala Lys Tyr Val Pro Met Ala Thr Val Asp Ala Leu Thr Ala Ala
      180      185      190
Leu Arg Lys Ser Leu Ile Cys Ser Leu Lys Asp Pro Ile Thr Ala Gly
      195      200      205
Ala Lys Ala Val Glu Tyr Ser Lys Asn Lys Asn Val Thr Val Ile His
      210      215      220
Arg Phe Ile Gly Thr Tyr Ile Asn Lys Glu Thr Phe Gln Leu Ser Lys
      225      230      235      240

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Thr Gly Lys Lys Ala Leu His Met Leu Trp Lys Ala Asn Glu Cys Cys
 245 250 255

Gln Tyr Thr

<210>431

<211>168

<212>PRT

<213>Chlamydia pneumoniae

<400>431

Glu Pro Ile Ser Thr Lys Lys Pro Phe Asn Tyr Leu Lys Leu Gly Lys
 1 5 10 15
 Lys Leu Tyr Ile Cys Ser Gly Arg Pro Met Asn Ala Val Asn Thr Pro
 20 25 30
 Lys Lys Ile Leu Cys Ile Val Ala Asp Tyr Arg Glu Ile Ser Pro Leu
 35 40 45
 Ile Glu Gln Leu Asp Phe Thr Gln Ile Asn Glu His Leu Tyr Ser Tyr
 50 55 60
 Arg Cys Thr Asp Tyr His Leu Asp Leu Tyr Ile Val His Val Trp Gly
 65 70 75 80
 Ser Thr Ala Val Leu Asn Ala Leu Gln Ser Tyr Cys Gln Ala Tyr Thr
 85 90 95
 Asp Tyr Asp Leu Trp Ile Asn Pro Gly Phe Val Gly Ala Cys Ser Pro
 100 105 110
 Glu Ile Pro Leu Gly Gln Cys Tyr Thr Ile Glu Lys Ile Ala Asn Leu
 115 120 125
 Thr Thr Asp Thr Pro Pro Val Leu Ser Glu Asp Pro Pro Tyr Ile Phe
 130 135 140
 Asp Ala Leu Pro Asp Ser Leu Pro Lys Ser Ser Leu Val Thr Ser Pro
 145 150 155 160
 Val Leu Tyr His Tyr Gly Phe Gln
 165

<210>432

<211>659

<212>PRT

<213>Chlamydia pneumoniae

<400>432

Met Lys Leu Leu Leu Lys Ala Val Leu Arg His Lys Asn His Leu Val
 1 5 10 15
 Ile Leu Gly Cys Ser Leu Leu Ala Ile Leu Gly Leu Thr Phe Ser Ser
 20 25 30
 Gln Met Glu Ile Phe Ser Leu Gly Met Ile Ala Lys Thr Gly Pro Asp
 35 40 45
 Ala Phe Leu Leu Phe Gly Arg Lys Glu Ser Gly Lys Leu Val Lys Val
 50 55 60
 Ser Glu Leu Ser Gln Lys Asp Ile Leu Glu Asn Trp Gln Ala Ile Ser
 65 70 75 80
 Lys Asp Ser Glu Thr Leu Thr Val Ser Asp Ala Thr Thr Tyr Ile Ala
 85 90 95
 Glu His Gly Lys Ser Thr Ala Ser Leu Thr Ser Lys Leu Ser Lys Phe
 100 105 110
 Val Arg Asn Tyr Ile Asp Val Ser Arg Phe Arg Gly Leu Ala Ile Phe
 115 120 125
 Leu Ile Cys Val Ala Ile Phe Lys Ala Val Thr Leu Phe Phe Gln Arg
 130 135 140
 Phe Leu Gly Gln Val Val Ala Ile Arg Val Ser Arg Asp Leu Arg Gln
 145 150 155 160
 Asp Tyr Phe Lys Ala Leu Gln Gln Leu Pro Met Thr Phe Phe His Asp
 165 170 175
 His Asp Ile Gly Asn Leu Ser Asn Arg Val Met Thr Asp Ser Ala Ser
 180 185 190
 Ile Ala Leu Ala Val Asn Ser Leu Met Ile Asn Tyr Ile Gln Ala Pro
 195 200 205
 Ile Thr Phe Ile Leu Thr Leu Gly Val Cys Leu Ser Ile Ser Trp Lys
 210 215 220

Phe Ser Ile Leu Ile Cys Val Ala Phe Pro Ile Phe Ile Leu Pro Ile
 225 230 235 240
 Val Val Ile Ala Arg Lys Ile Lys Asn Leu Ala Lys Arg Ile Gln Lys
 245 250 255
 Ser Gln Asp Ser Phe Ser Ser Val Leu Tyr Asp Phe Leu Ala Gly Val
 260 265 270
 Met Thr Val Lys Val Phe Arg Thr Glu Lys Phe Ala Phe Thr Lys Tyr
 275 280 285
 Cys Glu His Asn Asn Lys Ile Ser Ala Leu Glu Glu Lys Ser Ala Ala
 290 295 300
 Tyr Gly Leu Leu Pro Arg Pro Leu Leu His Thr Ile Ala Ser Leu Phe
 305 310 315 320
 Phe Ala Phe Val Val Ile Gly Ile Tyr Lys Phe Ala Ile Pro Pro
 325 330 335
 Glu Glu Leu Ile Val Phe Cys Gly Leu Leu Tyr Leu Ile Tyr Asp Pro
 340 345 350
 Ile Lys Lys Phe Gly Asp Glu Xaa Thr Ser Ile Met Arg Gly Cys Ala
 355 360 365
 Ala Ala Glu Arg Phe Tyr Glu Val Leu Asn His Pro Asp Leu His Ser
 370 375 380
 Gln Lys Glu Arg Glu Ile Glu Phe Leu Gly Leu Ser Asn Thr Ile Thr
 385 390 395 400
 Phe Glu Asn Val Ser Phe Gly Tyr Gln Glu Asp Lys His Ile Leu Lys
 405 410 415
 Asn Leu Ser Phe Thr Leu His Lys Gly Glu Ala Leu Gly Ile Val Gly
 420 425 430
 Pro Thr Gly Ser Gly Lys Thr Thr Leu Val Lys Leu Leu Pro Arg Leu
 435 440 445
 Tyr Glu Val Ser Gln Gly Lys Ile Leu Ile Asp Ser Leu Pro Ile Thr
 450 455 460
 Glu Tyr Asn Lys Gly Ser Leu Arg Asn His Ile Ala Cys Val Leu Gln
 465 470 475 480
 Asn Pro Phe Leu Phe Tyr Asp Thr Val Trp Asn Asn Leu Thr Cys Gly
 485 490 495
 Lys Asp Met Glu Glu Glu Ala Val Leu Glu Ala Leu Lys Arg Ala Tyr
 500 505 510
 Ala Asp Glu Phe Ile Leu Lys Leu Pro Lys Gly Val His Ser Val Leu
 515 520 525
 Glu Glu Ser Gly Lys Asn Leu Ser Gly Gly Gln Gln Arg Leu Ala
 530 535 540
 Ile Ala Arg Ala Leu Leu Lys Asn Ala Ser Ile Leu Ile Leu Asp Glu
 545 550 555 560
 Ala Thr Ser Ala Leu Asp Ala Ile Ser Glu Asn Tyr Ile Lys Asn Ile
 565 570 575
 Ile Gly Glu Leu Lys Gly Gln Cys Thr Gln Ile Ile Ile Ala His Lys
 580 585 590
 Leu Thr Thr Leu Glu His Val Asp Arg Val Leu Tyr Ile Glu Asn Gly
 595 600 605
 Gln Lys Ile Ala Glu Gly Thr Lys Glu Glu Leu Leu Gln Thr Cys Pro
 610 615 620
 Glu Phe Leu Lys Met Trp Glu Leu Ser Gly Thr Lys Glu Tyr Asn Arg
 625 630 635 640
 Val Phe Val Pro Asp His Lys Leu Val Ala Asn Pro Thr Asp Met Ala
 645 650 655
 Ile Thr Thr

<210>433

<211>344

<212>PRT

<213>Chlamydia pneumoniae

<400>433

Leu Cys Leu Arg Ile Val Cys Ile Lys Met Ile Leu Phe Ile Arg Gly
 1 5 10 15
 Glu His Ile Leu Met Glu Leu Leu Pro His Glu Lys Gln Val Val Glu

20 25 30
 Tyr Glu Lys Ala Ile Ala Glu Phe Lys Glu Lys Asn Lys Lys Asn Ser
 35 40 45
 Leu Leu Ser Ser Ser Glu Ile Gln Lys Leu Glu Lys Arg Leu Asp Lys
 50 55 60
 Leu Lys Glu Lys Ile Tyr Ser Asp Leu Thr Pro Trp Glu Arg Val Gln
 65 70 75 80
 Ile Cys Arg His Pro Ser Arg Pro Arg Thr Val Asn Tyr Ile Glu Gly
 85 90 95
 Met Cys Glu Glu Phe Val Glu Leu Cys Gly Asp Arg Thr Phe Arg Asp
 100 105 110
 Asp Pro Ala Val Val Gly Gly Phe Val Lys Ile Gln Gly Gln Arg Phe
 115 120 125
 Val Leu Ile Gly Gln Glu Lys Gly Cys Asp Thr Ala Ser Arg Leu His
 130 135 140
 Arg Asn Phe Gly Met Leu Cys Pro Glu Gly Phe Arg Lys Ala Leu Arg
 145 150 155 160
 Leu Gly Lys Leu Ala Glu Lys Phe Gly Leu Pro Val Val Phe Leu Val
 165 170 175
 Asp Thr Pro Gly Ala Tyr Pro Gly Leu Thr Ala Glu Glu Arg Gly Gln
 180 185 190
 Gly Trp Ala Ile Ala Lys Asn Leu Phe Glu Leu Ser Arg Leu Ala Thr
 195 200 205
 Pro Val Ile Ile Val Val Ile Gly Glu Gly Cys Ser Gly Gly Ala Leu
 210 215 220
 Gly Met Ala Val Gly Asp Ser Val Ala Met Leu Glu His Ser Tyr Tyr
 225 230 235 240
 Ser Val Ile Ser Pro Glu Gly Cys Ala Ser Ile Leu Trp Lys Asp Pro
 245 250 255
 Lys Lys Asn Ser Glu Ala Ala Ser Met Leu Lys Met His Gly Glu Asn
 260 265 270
 Leu Lys Gln Phe Gly Ile Ile Asp Thr Val Ile Lys Glu Pro Ile Gly
 275 280 285
 Gly Ala His His Asp Pro Ala Leu Val Tyr Ser Asn Val Arg Glu Phe
 290 295 300
 Ile Ile Gln Glu Trp Leu Arg Leu Lys Asp Leu Ala Ile Glu Glu Leu
 305 310 315 320
 Leu Glu Lys Arg Tyr Glu Lys Phe Arg Ser Ile Gly Leu Tyr Glu Thr
 325 330 335
 Thr Ser Glu Ser Gly Pro Glu Ala
 340

<210>434

<211>434

<212>PRT

<213>Chlamydia pneumoniae

<400>434

Ser Gln Thr Gly Phe Leu Pro Gly Leu Thr Leu Ile Phe Val Ile Ile
 1 5 10 15
 Ile Val Trp Cys Asn Ala Phe Leu Ile Lys Leu Cys Val Ile Met Gly
 20 25 30
 Leu Gln Ser Arg Leu Gln His Cys Ile Glu Val Ser Gln Asn Ser Asn
 35 40 45
 Phe Asp Ser Gln Val Lys Gln Phe Ile Tyr Ala Cys Gln Asp Lys Thr
 50 55 60
 Leu Arg Gln Ser Val Leu Lys Ile Phe Arg Tyr His Pro Leu Leu Lys
 65 70 75 80
 Ile His Asp Ile Ala Arg Ala Val Tyr Leu Leu Met Ala Leu Glu Glu
 85 90 95
 Gly Glu Asp Leu Gly Leu Ser Phe Leu Asn Val Gln Gln Tyr Pro Ser
 100 105 110
 Gly Ala Val Glu Leu Phe Ser Cys Gly Gly Phe Pro Trp Lys Gly Leu
 115 120 125
 Pro Tyr Pro Ala Glu His Ala Glu Phe Gly Leu Leu Leu Gln Ile
 130 135 140

Ala Glu Phe Tyr Glu Glu Ser Gln Ala Tyr Val Ser Lys Met Ser His
 145 150 155 160
 Phe Gln Gln Ala Leu Phe Asp His Gln Gly Ser Val Phe Pro Ser Leu
 165 170 175
 Trp Ser Gln Glu Asn Ser Arg Leu Leu Lys Glu Lys Thr Thr Leu Ser
 180 185 190
 Gln Ser Phe Leu Phe Gln Leu Gly Met Gln Ile His Pro Glu Tyr Ser
 195 200 205
 Leu Glu Asp Pro Ala Leu Gly Phe Trp Met Gln Arg Thr Arg Ser Ser
 210 215 220
 Ser Ala Phe Val Ala Ala Ser Gly Cys Gln Ser Ser Leu Gly Ala Tyr
 225 230 235 240
 Ser Ser Gly Asp Val Gly Val Ile Ala Tyr Gly Pro Cys Ser Gly Asp
 245 250 255
 Ile Ser Asp Cys Tyr Tyr Phe Gly Cys Cys Gly Ile Ala Lys Glu Phe
 260 265 270
 Val Cys Gln Xaa Ser His Gln Thr Thr Glu Ile Ser Phe Leu Thr Ser
 275 280 285
 Thr Gly Lys Pro His Pro Arg Asn Thr Gly Phe Ser Tyr Leu Arg Asp
 290 295 300
 Ser Tyr Val His Leu Pro Ile Arg Cys Lys Ile Thr Ile Ser Asp Lys
 305 310 315 320
 Gln Tyr Arg Val His Ala Ala Leu Ala Glu Ala Thr Ser Ala Met Thr
 325 330 335
 Phe Ser Ile Phe Cys Lys Gly Lys Asn Cys Gln Val Val Asp Gly Pro
 340 345 350
 Arg Leu Arg Ser Cys Ser Leu Asp Ser Tyr Lys Gly Pro Gly Asn Asp
 355 360 365
 Ile Met Ile Leu Gly Glu Asn Asp Ala Ile Asn Ile Val Ser Ala Ser
 370 375 380
 Pro Tyr Met Glu Ile Phe Ala Leu Gln Gly Lys Glu Lys Phe Trp Asn
 385 390 395 400
 Ala Asp Phe Leu Ile Asn Ile Pro Tyr Lys Glu Glu Gly Val Met Leu
 405 410 415
 Ile Phe Glu Lys Lys Val Thr Ser Glu Lys Gly Arg Phe Phe Thr Lys
 420 425 430
 Met Asn

<210>435

<211>85

<212>PRT

<213>Chlamydia pneumoniae

<400>435

Arg Arg Met Pro Asp Ser Leu His Lys Thr Leu Arg Ser Val Thr Gly
 1 5 10 15
 Val Gly Gln Ile Pro His Val Leu Gln Asp Lys Val Ile Leu Ser Lys
 20 25 30
 Glu Ile Pro His Lys Lys Thr Val Leu Gln His Leu Lys Gly Thr Ala
 35 40 45
 Val His Leu Lys Ser Leu Ser Leu Asn Pro Arg Leu Leu Leu Arg Pro
 50 55 60
 Ser Lys Asp Arg Arg Pro Glu Gln Tyr His Glu Phe Leu Val Lys Asp
 65 70 75 80
 Gly Ser Gly Lys Ser
 85

<210>436

<211>105

<212>PRT

<213>Chlamydia pneumoniae

<400>436

Glu Ala Leu Ser Asn Met Ala Thr Met Thr Lys Lys Lys Leu Ile Ser
 1 5 10 15
 Thr Ile Ser Gln Asp His Lys Ile His Pro Asn His Val Arg Thr Val
 20 25 30

Ile Gln Asn Phe Leu Asp Lys Met Thr Asp Ala Leu Val Lys Gly Asp
 35 40 45
 Arg Leu Glu Phe Arg Asp Phe Gly Val Leu Gln Val Val Glu Arg Lys
 50 55 60
 Pro Lys Val Gly Arg Asn Pro Arg Asn Ala Ala Val Pro Ile His Ile
 65 70 75 80
 Pro Ala Arg Arg Ala Val Lys Phe Thr Pro Gly Lys Arg Met Lys Arg
 85 90 95
 Leu Ile Glu Thr Pro Asn Lys His Ser
 100 105

<210>437

<211>264

<212>PRT

<213>Chlamydia pneumoniae

<400>437

Met Lys Leu Thr Lys Tyr Leu Asn Thr Lys Gln Leu Arg Ser Met Ile
 1 5 10 15
 Ser Arg Leu Phe Val Arg Tyr Ser Leu Pro Met Ser Lys Gln Leu Ser
 20 25 30
 Phe Phe Ala Leu Cys Val Leu Gly Ser His Pro Ile Phe Ala Gln Thr
 35 40 45
 Pro Asn Pro Pro Gln Arg Val Arg Arg Ser Glu Val Ile Phe Ile Asp
 50 55 60
 Pro Gly His Gly Gly Lys Asp Gln Gly Thr Ala Ser Lys Glu Leu His
 65 70 75 80
 Tyr Glu Glu Lys Ser Leu Thr Leu Ser Leu Ala Leu Thr Val Gln Ser
 85 90 95
 Tyr Leu Lys Arg Met Gly Tyr Lys Pro Gln Leu Thr Arg Ser Ser Asp
 100 105 110
 Val Tyr Val Asp Leu Gly Lys Arg Val Ala Leu Ser Asn Arg Gly Gln
 115 120 125
 Gly Asp Val Phe Ile Ser Ile His Cys Asn His Ser Ser Asn Ala Ala
 130 135 140
 Ala Phe Gly Thr Glu Val Tyr Phe Tyr Asn Gly Lys Val Gly Ser Pro
 145 150 155 160
 Thr Arg Asn Arg Met Ser Glu Val Leu Gly Lys Asn Ile Leu Ala Ala
 165 170 175
 Met Glu Lys Asn Gly Ile Leu Lys Ser Arg Gly Leu Lys Thr Ala Asn
 180 185 190
 Phe Val Val Ile Arg Asp Thr Ser Met Pro Ala Val Leu Val Glu Thr
 195 200 205
 Gly Phe Leu Ser Asn Ser Arg Glu Arg Ala Ala Leu Gln Asp Ala Arg
 210 215 220
 Tyr Arg Met His Val Ala Lys Gly Ile Ala Glu Gly Val His Asn Phe
 225 230 235 240
 Leu Ser Gly Pro Ser Phe Gln Lys Pro Lys Gln Asn Ile Ala Lys Ile
 245 250 255
 Arg Lys Pro Gln Ile Gln Ala Asn
 260

<210>438

<211>483

<212>PRT

<213>Chlamydia pneumoniae

<400>438

Met Asp Leu Lys Glu Leu Leu His Gly Val Gln Ala Lys Ile Tyr Gly
 1 5 10 15
 Lys Val Arg Pro Leu Glu Val Arg Asn Leu Thr Arg Asp Ser Arg Cys
 20 25 30
 Val Ser Val Gly Asp Ile Phe Ile Ala His Lys Gly Gln Arg Tyr Asp
 35 40 45
 Gly Asn Asp Phe Ala Val Asp Ala Leu Ala Asn Gly Ala Ile Ala Ile
 50 55 60
 Ala Ser Ser Leu Tyr Asn Pro Phe Leu Ser Val Val Gln Ile Ile Thr
 65 70 75 80

PCT/IB98/01890

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<210>439
<211>653
<212>PRT
<213>Chlamydia pneumoniae
<400>439
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628

50	55	60
Lys Gly Asp Lys Asp Leu Gln Gln Pro Phe Ala Val Asp Ile Thr Lys		
65	70	75
Phe His Leu Cys Ala Asp Pro Leu Ala Ile Pro Glu Cys His Arg Asp		80
	85	90
Glu Ile Ile Gln Gly Ile Leu Gln Phe Ile Glu Gly Gln Thr Tyr Asp		95
	100	105
Asp Leu Ser Leu Lys Leu Asp Lys Lys Ser Arg Tyr Cys Lys Leu Tyr		110
	115	120
Pro Leu Leu Asp Val Ser Val His Asp Arg Leu Ser Leu Trp Trp Lys		125
	130	135
Gly Tyr Ala Thr Lys His Arg Leu Pro Thr Asn Ala Leu Phe Phe Ile		140
145	150	155
Thr Asp Tyr Gln Arg Ser Tyr Pro Phe Gly Lys Leu Leu Gly Gln Val		160
	165	170
Leu His Thr Leu Arg Glu Ile Lys Asp Glu Lys Thr Gly Lys Ala Phe		175
	180	185
Pro Thr Gly Gly Met Glu Ala Tyr Phe Asn His Ile Leu Glu Gly Asp		190
	195	200
Val Gly Glu Arg Lys Leu Leu Arg Ser Pro Leu Asn Arg Leu Asp Thr		205
	210	215
Asn Arg Val Ile Lys Leu Pro Lys Asp Gly Ser Asp Ile Tyr Leu Thr		220
225	230	235
Ile Asn Pro Val Ile Gln Thr Ile Ala Glu Glu Glu Leu Glu Arg Gly		240
	245	250
Val Leu Glu Ala Lys Ala Gln Gly Gly Arg Leu Ile Leu Met Asn Ser		255
	260	265
Gln Thr Gly Glu Ile Leu Ala Leu Ala Gln Tyr Pro Phe Phe Asp Pro		270
	275	280
Thr Asn Tyr Lys Glu Tyr Phe Asn Asn Lys Glu Arg Ile Glu His Thr		285
	290	295
Lys Val Ser Phe Val Ser Asp Val Phe Glu Pro Gly Ser Ile Met Lys		300
305	310	315
Pro Leu Thr Val Ala Ile Ala Leu Gln Ala Asn Glu Glu Ala Ser Leu		320
	325	330
Lys Ser Gln Lys Lys Ile Phe Asp Pro Glu Glu Pro Ile Asp Val Thr		335
	340	345
Arg Thr Leu Phe Pro Gly Arg Lys Gly Ser Pro Leu Lys Asp Ile Ser		350
	355	360
Arg Asn Ser Gln Leu Asn Met Tyr Met Ala Ile Gln Lys Ser Ser Asn		365
	370	375
Val Tyr Val Ala Gln Leu Ala Asp Arg Ile Ile Gln Ser Leu Gly Val		380
385	390	395
Ala Trp Tyr Gln Gln Lys Leu Leu Ala Leu Gly Phe Gly Arg Lys Thr		400
	405	410
Gly Ile Glu Leu Pro Ser Glu Ala Ser Gly Leu Val Pro Ser Pro His		415
	420	425
Arg Phe His Ile Asn Gly Ser Leu Glu Trp Ser Leu Ser Thr Pro Tyr		430
	435	440
Ser Leu Ala Met Gly Tyr Asn Ile Leu Ala Thr Gly Ile Gln Met Val		445
	450	455
Gln Ala Tyr Ala Ile Leu Ala Asn Gly Gly Tyr Ala Val Arg Pro Thr		460
465	470	475
Leu Val Lys Lys Ile Val Ser Ala Ser Gly Glu Glu Tyr His Leu Pro		480
	485	490
Thr Lys Glu Lys Thr Arg Leu Phe Ser Glu Glu Ile Thr Arg Glu Val		495
	500	505
Val Arg Ala Met Arg Phe Thr Thr Leu Pro Gly Gly Ser Gly Phe Arg		510
	515	520
Ala Ser Pro Lys His His Ser Ser Ala Gly Lys Thr Gly Thr Thr Glu		525
	530	535
Lys Met Ile His Gly Lys Tyr Asp Lys Arg Arg His Ile Ala Ser Phe		540
545	550	555
Ile Gly Phe Thr Pro Val Glu Ser Ser Glu Gly Asn Phe Pro Pro Leu		560

565 570 575
 Val Met Leu Val Ser Ile Asp Asp Pro Glu Tyr Gly Leu Arg Ala Asp
 580 585 590
 Gly Thr Lys Asn Tyr Met Gly Gly Arg Cys Ala Ala Pro Ile Phe Ser
 595 600 605
 Arg Val Ala Asp Arg Thr Leu Leu Tyr Leu Gly Ile Leu Pro Asp Lys
 610 615 620
 Lys Leu Arg Asn Cys Asp Glu Glu Ala Ala Ala Leu Lys Arg Leu Tyr
 625 630 635 640
 Glu Glu Trp Asn Arg Ser Pro Lys Gln Gly Gly Thr Arg
 645 650

<210>440

<211>300

<212>PRT

<213>Chlamydia pneumoniae

<400>440

Glu Ile Leu Met Ser Glu Arg Ala His Ile Pro Val Leu Val Glu Glu
 1 5 10 15
 Cys Leu Ala Leu Phe Ala Gln Arg Pro Pro Gln Thr Phe Arg Asp Val
 20 25 30
 Thr Leu Gly Ala Gly Gly His Ala Tyr Ala Phe Leu Glu Ala Tyr Pro
 35 40 45
 Ser Leu Thr Cys Tyr Asp Gly Ser Asp Arg Asp Leu Gln Ala Leu Ala
 50 55 60
 Ile Ala Glu Lys Arg Leu Glu Thr Phe Gln Asp Arg Val Ser Phe Ser
 65 70 75 80
 His Ala Ser Phe Glu Asp Leu Ala Asn Gln Pro Thr Pro Arg Leu Tyr
 85 90 95
 Asp Gly Val Leu Ala Asp Leu Gly Val Ser Ser Met Gln Leu Asp Thr
 100 105 110
 Leu Ser Arg Gly Phe Ser Phe Gln Gly Glu Lys Glu Glu Leu Asp Met
 115 120 125
 Arg Met Asp Gln Thr Gln Glu Leu Ser Ala Ser Asp Val Leu Asn Ser
 130 135 140
 Leu Lys Glu Glu Glu Leu Gly Arg Ile Phe Arg Glu Tyr Gly Glu Glu
 145 150 155 160
 Pro Gln Trp Lys Ser Ala Ala Lys Ala Val Val His Phe Arg Lys His
 165 170 175
 Lys Lys Ile Leu Ser Ile Gln Asp Val Lys Glu Ala Leu Leu Gly Val
 180 185 190
 Phe Pro His Tyr Arg Phe His Arg Lys Ile His Pro Leu Thr Leu Ile
 195 200 205
 Phe Gln Ala Leu Arg Val Tyr Val Asn Gly Glu Asp Arg Gln Leu Lys
 210 215 220
 Ser Leu Leu Thr Ser Ala Ile Ser Trp Leu Ala Pro Gln Gly Arg Leu
 225 230 235 240
 Val Ile Ile Ser Phe Cys Ser Ser Glu Asp Arg Pro Val Lys Trp Phe
 245 250 255
 Phe Lys Glu Ala Glu Ala Ser Gly Leu Gly Lys Val Ile Thr Lys Lys
 260 265 270
 Val Ile Gln Pro Thr Tyr Gln Glu Val Arg Arg Asn Pro Arg Ser Arg
 275 280 285
 Ser Ala Lys Leu Arg Cys Phe Glu Lys Ala Ser Gln
 290 295 300

<210>441

<211>184

<212>PRT

<213>Chlamydia pneumoniae

<400>441

Gly Leu Ala Met Val Glu Ile Phe Asn Tyr Ser Thr Ser Ile Tyr Glu
 1 5 10 15
 Gln His Ala Ser Asn Asn Arg Ile Val Ser Asp Phe Arg Lys Glu Ile
 20 25 30
 Gln Met Glu Gly Ile Ser Ile Arg Asp Val Ala Lys His Ala Gln Ile

35 40 45
 Leu Asp Met Asn Pro Lys Pro Ser Ala Leu Thr Ser Leu Leu Gln Thr
 50 55 60
 Asn Gln Lys Ser His Trp Ala Cys Phe Ser Pro Asn Asn Phe Tyr
 65 70 75 80
 Lys Gln Arg Phe Ser Thr Pro Tyr Leu Ala Pro Ser Leu Gly Ser Pro
 85 90 95
 Asp Gln Gln Asp Glu Asp Ile Glu Lys Ile Ser Ser Phe Leu Lys Val
 100 105 110
 Leu Thr Arg Gly Lys Phe Ser Tyr Arg Ser Gln Ile Thr Pro Phe Leu
 115 120 125
 Ser Tyr Lys Asp Lys Glu Glu Glu Asp Glu Asp Pro Glu Glu Asp
 130 135 140
 Asp Asp Asp Pro Arg Val Gln Gln Gly Lys Val Leu Leu Lys Ala Leu
 145 150 155 160
 Asp Leu Gly Val Lys Ser Thr Asn Val Met Ile Asp Tyr Val Ile Ser
 165 170 175
 Arg Ile Phe Gln Phe Val Gln Gly
 180

<210>442

<211>143

<212>PRT

<213>Chlamydia pneumoniae

<400>442

Cys Met Leu Asp Asn Glu Trp Lys Ala Ile Leu Gly Trp Gly Asp Asp
 1 5 10 15
 Glu Leu Glu Glu Leu Arg Ile Ser Gly Tyr Ser Phe Leu Arg Gln Gly
 20 25 30
 His Tyr Ser Lys Ala Ile Leu Phe Phe Glu Ala Leu Val Ile Leu Asp
 35 40 45
 Pro Leu Ser Ile Tyr Asp His Gln Thr Leu Gly Gly Leu Tyr Leu Gln
 50 55 60
 Ile Gly Glu Asn Ser Gln Ala Leu Ala Val Leu Asp Gln Ala Leu Arg
 65 70 75 80
 Met Gln Gly Asp His Leu Pro Thr Leu Leu Asn Lys Thr Lys Ala Leu
 85 90 95
 Phe Cys Leu Gly Arg Ile Glu Glu Ala Thr Ala Ile Ala Thr Tyr Leu
 100 105 110
 Ser Ser Cys Pro Ile Pro Ala Ile Ala Asn Asp Ala Glu Ala Leu Leu
 115 120 125
 Met Ser Tyr Ser Lys Ala Thr Lys Lys Asn Ala Ala Leu Val Arg
 130 135 140

<210>443

<211>467

<212>PRT

<213>Chlamydia pneumoniae

<400>443

Met Gly Trp Val Asp Cys Ile Trp Glu Ser Phe Ile Asn Lys Glu Ser
 1 5 10 15
 Gly Met Leu Thr Cys Asn Glu Cys Thr Thr Trp Glu Gln Phe Leu Asn
 20 25 30
 Tyr Val Lys Thr Arg Cys Ser Lys Thr Ala Phe Glu Asn Trp Ile Ser
 35 40 45
 Pro Ile Gln Val Leu Glu Glu Thr Gln Glu Lys Ile Arg Leu Glu Val
 50 55 60
 Pro Asn Ile Phe Val Gln Asn Tyr Leu Leu Asp Asn Tyr Lys Arg Asp
 65 70 75 80
 Leu Cys Ser Phe Val Pro Leu Asp Val His Gly Glu Pro Ala Leu Glu
 85 90 95
 Phe Val Val Ala Glu His Lys Lys Pro Ser Ala Pro Val Ala Ser Gln
 100 105 110
 Lys Glu Ser Asn Glu Gly Ile Ser Glu Val Phe Glu Glu Thr Lys Asp
 115 120 125
 Phe Glu Leu Lys Leu Asn Leu Ser Tyr Arg Phe Asp Asn Phe Ile Glu

130 135 140
 Gly Pro Ser Asn Gln Phe Val Lys Ser Ala Ala Val Gly Ile Ala Gly
 145 150 155 160
 Lys Pro Gly Arg Ser Tyr Asn Pro Leu Phe Ile His Gly Gly Val Gly
 165 170 175
 Leu Gly Lys Thr His Leu Leu His Ala Val Gly His Tyr Val Arg Glu
 180 185 190
 His His Lys Asn Leu Arg Ile His Cys Ile Thr Thr Glu Ala Phe Ile
 195 200 205
 Asn Asp Leu Val Tyr His Leu Lys Ser Lys Ser Val Asp Lys Met Lys
 210 215 220
 Asn Phe Tyr Arg Ser Leu Asp Leu Leu Leu Val Asp Asp Ile Gln Phe
 225 230 235 240
 Leu Gln Asn Arg Gln Asn Phe Glu Glu Glu Phe Cys Asn Thr Phe Glu
 245 250 255
 Thr Leu Ile Asn Leu Ser Lys Gln Ile Val Ile Thr Ser Asp Lys Pro
 260 265 270
 Pro Ser Gln Leu Lys Leu Ser Glu Arg Ile Ile Ala Arg Met Glu Trp
 275 280 285
 Gly Leu Val Ala His Val Gly Ile Pro Asp Leu Glu Thr Arg Val Ala
 290 295 300
 Ile Leu Gln His Lys Ala Glu Gln Lys Gly Leu Leu Ile Pro Asn Glu
 305 310 315 320
 Met Ala Phe Tyr Ile Ala Asp His Ile Tyr Gly Asn Val Arg Gln Leu
 325 330 335
 Glu Gly Ala Ile Asn Lys Leu Thr Ala Tyr Cys Arg Leu Phe Gly Lys
 340 345 350
 Ser Leu Thr Glu Thr Thr Val Arg Glu Thr Leu Lys Glu Leu Phe Arg
 355 360 365
 Ser Pro Thr Lys Gln Lys Ile Ser Val Glu Thr Ile Leu Lys Ser Val
 370 375 380
 Ala Thr Val Phe Gln Val Lys Leu Asn Asp Leu Lys Gly Asn Ser Arg
 385 390 395 400
 Ser Lys Asp Leu Val Leu Ala Arg Gln Ile Ala Met Tyr Leu Ala Lys
 405 410 415
 Thr Leu Ile Thr Asp Ser Leu Val Ala Ile Gly Ala Ala Phe Gly Lys
 420 425 430
 Thr His Ser Thr Val Leu Tyr Ala Cys Lys Thr Ile Glu His Lys Leu
 435 440 445
 Gln Asn Asp Glu Thr Leu Lys Arg Gln Val Asn Leu Cys Lys Asn His
 450 455 460
 Ile Val Gly
 465
 <210>444
 <211>195
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>444
 Met Phe Arg Arg Thr Gly Lys Gly Pro Phe Glu Asp Val Gln Thr Leu
 1 5 10 15
 Tyr Glu Glu Glu Thr Ser Ser Pro Ser Ser Tyr Ser Pro Tyr Ser Arg
 20 25 30
 Ser Glu Arg Pro Glu Thr Pro Pro Ser Leu Phe Asp Asn Pro Lys Ala
 35 40 45
 Ser Glu Ala Arg Pro Leu Asn His Asn Leu Thr Glu Glu Ser Ser Leu
 50 55 60
 Pro Gln Trp Ser Ser Thr Pro Arg Thr Glu Ser Leu Leu Pro Leu Glu
 65 70 75 80
 Glu Pro Glu Thr Thr Leu Gly Glu Gly Val Thr Phe Lys Gly Glu Leu
 85 90 95
 Ala Phe Glu Arg Leu Leu Arg Ile Asp Gly Thr Phe Glu Gly Ile Leu
 100 105 110
 Val Ser Lys Gly Lys Ile Ile Ile Gly Pro Lys Gly Val Val Lys Ala
 115 120 125

Asp Ile Gln Leu Gln Glu Ala Ile Ile Glu Gly Val Val Glu Gly Asn
 130 135 140
 Ile Thr Val Ser Gly Lys Val Glu Leu Arg Gly Gly Ala Ile Ile Lys
 145 150 155 160
 Gly Asp Ile Gln Ala Asn Thr Leu Cys Val Asp Glu Gly Val Arg Ile
 165 170 175
 Leu Gly Tyr Leu Ala Ile Ala Gly Ile Thr Asp His Ser Glu Arg Glu
 180 185 190
 Arg Asp Leu
 195

<210>445

<211>192

<212>PRT

<213>Chlamydia pneumoniae

<400>445

Met Val Leu Phe Ser Leu Leu Phe Pro Lys Leu Cys Tyr Gly Cys Gln
 1 5 10 15
 Ala Pro Gly Ala Tyr Phe Cys Ser Asn Cys Leu Glu Lys Leu Leu Val
 20 25 30
 Glu Asp Arg Glu Gly Arg Cys Leu His Cys Phe Arg Tyr Leu Gly Ser
 35 40 45
 Ser Glu Thr Arg Leu Cys Ser Gln Cys Ser Pro Ser Ser Gln Leu Gln
 50 55 60
 Ala Phe Ser Leu Tyr Leu Pro Ser Gln Thr Ala Leu Ser Val Tyr Ala
 65 70 75 80
 Arg Ala Cys Glu Gly Lys Arg Pro Ala Leu Gln Phe Phe Ser Lys Ser
 85 90 95
 Ile Ala Phe Glu Leu Ala Ser Leu Asp Glu Thr Pro Ser Cys Ile Ala
 100 105 110
 Tyr Ile Thr Ser Thr Ile Ser Arg Lys Ile Val Val Glu Val Ala Lys
 115 120 125
 Leu Glu Lys Leu Leu Arg Ile Pro Leu Trp Pro Trp Leu Pro Lys Lys
 130 135 140
 Arg Gln Ile Glu Lys Leu Pro Lys Gly Glu Gly Ile Cys Phe Leu Ser
 145 150 155 160
 Ala Tyr Pro Leu Ser Gln Lys Trp Met Gln Thr Ile Val Gly Gly Ser
 165 170 175
 Ala Ser Pro Leu Val Ser Ile Ser Leu Phe Leu Ser Gln Asn Asp Gln
 180 185 190

<210>446

<211>517

<212>PRT

<213>Chlamydia pneumoniae

<400>446

Val Phe Glu Arg Val Glu Ala Ser Thr Phe Leu Ser Ile Thr Met Leu
 1 5 10 15
 Lys Lys Phe Ile Asn Ser Leu Trp Lys Leu Cys Gln Gln Asp Lys Tyr
 20 25 30
 Gln Arg Phe Thr Pro Ile Val Asp Ala Ile Asp Thr Phe Cys Tyr Glu
 35 40 45
 Pro Ile Glu Thr Pro Ser Lys Pro Pro Phe Ile Arg Asp Ser Val Asp
 50 55 60
 Val Lys Arg Trp Met Met Leu Val Val Ile Ala Leu Phe Pro Ala Thr
 65 70 75 80
 Phe Val Ala Ile Trp Asn Ser Gly Leu Gln Ser Ile Val Tyr Ser Ser
 85 90 95
 Gly Asn Pro Val Leu Met Glu Gln Phe Leu His Ile Ser Gly Phe Gly
 100 105 110
 Ser Tyr Leu Ser Phe Val Tyr Lys Glu Ile His Ile Val Pro Ile Leu
 115 120 125
 Trp Glu Gly Leu Lys Ile Phe Ile Pro Leu Leu Thr Ile Ser Tyr Val
 130 135 140
 Val Gly Gly Thr Cys Glu Val Leu Phe Ala Val Val Arg Gly His Lys
 145 150 155 160

Ile Ala Glu Gly Leu Leu Val Thr Gly Ile Leu Tyr Pro Leu Thr Leu
 165 170 175
 Pro Pro Thr Ile Pro Tyr Trp Met Ala Ala Leu Gly Ile Ala Phe Gly
 180 185 190
 Ile Val Val Ser Lys Glu Leu Phe Gly Gly Thr Gly Met Asn Ile Leu
 195 200 205
 Asn Pro Ala Leu Ser Gly Arg Ala Phe Leu Phe Phe Thr Phe Pro Ala
 210 215 220
 Lys Met Ser Gly Asp Val Trp Val Gly Ser Asn Pro Gly Val Ile Lys
 225 230 235 240
 Asp Ser Leu Met Lys Met Asn Ser Ser Thr Gly Lys Val Leu Ile Asp
 245 250 255
 Gly Phe Ser Gln Ser Thr Cys Leu Gln Thr Leu Asn Ser Thr Pro Pro
 260 265 270
 Ser Val Lys Arg Leu His Val Asp Ala Ile Ala Ala Asn Met Leu His
 275 280 285
 Ile Pro His Val Pro Thr Gln Asp Val Ile His Ser Gln Phe Ser Leu
 290 295 300
 Trp Thr Glu Thr His Pro Gly Trp Val Leu Asp Asn Leu Thr Leu Thr
 305 310 315 320
 Gln Leu Gln Thr Phe Val Thr Ala Pro Val Ala Glu Gly Gly Leu Gly
 325 330 335
 Leu Leu Pro Thr Gln Phe Asp Ser Ala Tyr Ala Ile Thr Asp Val Ile
 340 345 350
 Tyr Gly Ile Gly Lys Phe Ser Ala Gly Asn Leu Phe Trp Gly Asn Ile
 355 360 365
 Ile Gly Ser Leu Gly Glu Thr Ser Thr Phe Ala Cys Leu Leu Gly Ala
 370 375 380
 Ile Phe Leu Ile Val Thr Gly Ile Ala Ser Trp Arg Thr Met Ala Ala
 385 390 395 400
 Phe Gly Ile Gly Ala Phe Leu Thr Gly Trp Leu Phe Lys Phe Ile Ser
 405 410 415
 Val Leu Ile Val Gly Gln Asn Gly Ala Trp Ala Pro Ala Arg Phe Phe
 420 425 430
 Ile Pro Ala Tyr Arg Gln Leu Phe Leu Gly Gly Leu Ala Phe Gly Leu
 435 440 445
 Val Phe Met Ala Thr Asp Pro Val Ser Ser Pro Thr Met Lys Leu Gly
 450 455 460
 Lys Trp Ile Tyr Gly Phe Phe Ile Gly Phe Met Thr Ile Val Ile Arg
 465 470 475 480
 Leu Ile Asn Pro Ala Tyr Pro Glu Gly Val Met Leu Ala Ile Leu Leu
 485 490 495
 Gly Asn Val Phe Ala Pro Leu Ile Asp Tyr Phe Ala Val Arg Lys Tyr
 500 505 510
 Arg Lys Arg Gly Val
 515

<210>447

<211>320

<212>PRT

<213>Chlamydia pneumoniae

<400>447

Met Ser Lys Gly Ser Ser Lys His Thr Val Arg Ile Asn Gln Thr Trp
 1 5 10 15
 Tyr Ile Val Ser Phe Ile Leu Gly Leu Ser Leu Phe Ala Gly Val Leu
 20 25 30
 Leu Ser Thr Ile Tyr Tyr Val Leu Ser Pro Ile Gln Glu Gln Ala Ala
 35 40 45
 Thr Phe Asp Arg Asn Lys Gln Met Leu Leu Ala Ala His Ile Leu Asp
 50 55 60
 Phe Lys Gly Arg Phe Gln Ile Gln Glu Lys Lys Glu Trp Val Pro Ala
 65 70 75 80
 Thr Phe Asp Lys Lys Thr Gln Leu Leu Glu Val Ala Thr Lys Lys Val
 85 90 95
 Ser Glu Val Ser Tyr Pro Glu Leu Glu Leu Tyr Ala Glu Arg Phe Val

100 105 110
 Arg Pro Leu Leu Thr Asp Ala Gln Gly Lys Val Phe Ser Phe Glu Glu
 115 120 125
 Lys Asn Leu Asn Pro Ile Glu Phe Phe Glu Lys Tyr Gln Glu Ser Pro
 130 135 140
 Pro Cys Gln Gln Ser Pro Leu Pro Phe Tyr Val Ile Leu Glu Asn Thr
 145 150 155 160
 Ser Arg Thr Glu Asn Met Ser Gly Ala Asp Val Ala Lys Asp Leu Ser
 165 170 175
 Thr Val Gln Ala Leu Ile Phe Pro Ile Ser Gly Phe Gly Leu Trp Gly
 180 185 190
 Pro Ile His Gly Tyr Leu Gly Val Lys Asn Asp Gly Asp Thr Val Leu
 195 200 205
 Gly Thr Ala Trp Tyr Gln Gln Gly Glu Thr Pro Gly Leu Gly Ala Asn
 210 215 220
 Ile Thr Asn Pro Glu Trp Gln Glu Gln Phe Tyr Gly Lys Lys Ile Phe
 225 230 235 240
 Leu Gln Asp Ser Ser Gly Thr Thr Asn Phe Ala Thr Thr Asp Leu Gly
 245 250 255
 Leu Glu Val Val Lys Gly Ser Val Arg Thr Thr Leu Gly Asp Ser Pro
 260 265 270
 Lys Ala Leu Ser Ala Ile Asp Gly Ile Ser Gly Ala Thr Leu Thr Cys
 275 280 285
 Asn Gly Val Thr Glu Ala Tyr Val Gln Ser Leu Ala Cys Tyr Arg Gln
 290 295 300
 Leu Leu Ile Asn Phe Ser Asn Leu Thr His Glu Lys Lys Thr Gly Glu
 305 310 315 320
 <210>448
 <211>223
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>448

Met Thr Ser Lys Lys Ser Tyr Lys Ser Tyr Phe Phe Asp Pro Leu Trp
 1 5 10 15
 Ser Asn Asn Gln Ile Leu Ile Ala Ile Leu Gly Ile Cys Ser Ala Leu
 20 25 30
 Ala Val Thr Thr Thr Val Gln Thr Ala Ile Thr Met Gly Ile Ala Val
 35 40 45
 Ser Ile Val Thr Gly Cys Ser Ser Phe Phe Val Ser Leu Leu Arg Lys
 50 55 60
 Phe Thr Pro Asp Ser Val Arg Met Ile Thr Gln Leu Ile Ile Ile Ser
 65 70 75 80
 Leu Phe Val Ile Val Ile Asp Gln Phe Leu Lys Ala Phe Phe Phe Asp
 85 90 95
 Ile Ser Lys Thr Leu Ser Val Phe Val Gly Leu Ile Ile Thr Asn Cys
 100 105 110
 Xaa Xaa Met Gly Arg Ser Glu Ser Leu Ala Arg His Val Thr Pro Ile
 115 120 125
 Pro Ala Phe Leu Asp Gly Phe Ala Ser Gly Leu Gly Tyr Gly Trp Val
 130 135 140
 Leu Leu Val Ile Gly Val Ile Arg Glu Leu Phe Gly Phe Gly Thr Pro
 145 150 155 160
 Tyr Gly Val Ser His His Pro Ser Ile Cys Tyr Ala Ser Glu Thr His
 165 170 175
 Pro Asp Gly Tyr Gln Asn Leu Ser Leu Met Val Leu Ala Pro Ser Ala
 180 185 190
 Phe Phe Leu Leu Gly Ile Met Ile Trp Leu Val Asn Ile Arg Asp Ser
 195 200 205
 Lys Glu Lys Xaa Val Val Tyr Val Val Arg Cys Val Tyr Leu Ala
 210 215 220
 <210>449
 <211>256
 <212>PRT
 <213>Chlamydia pneumoniae

<400>449

Met Trp Leu Gly Ala Tyr Thr Trp Leu Asn Val Phe Gly Ile Leu Leu
 1 5 10 15
 Gln Ala Ala Phe Ile Gln Asn Ile Leu Leu Ala Asn Phe Leu Gly Met
 20 25 30
 Cys Ser Tyr Leu Ala Cys Ser Thr Arg Val Ser Thr Ala Asn Gly Leu
 35 40 45
 Gly Met Ser Val Ala Leu Val Leu Thr Val Thr Gly Ser Ile Asn Trp
 50 55 60
 Phe Val His Ala Phe Ile Thr Gly Pro Lys Ala Leu Thr Trp Ile Ser
 65 70 75 80
 Pro Ser Leu Ala Ser Val Asn Leu Gly Phe Leu Glu Leu Ile Ile Phe
 85 90 95
 Ile Val Val Ile Ala Ala Phe Thr Gln Ile Leu Glu Leu Leu Leu Glu
 100 105 110
 Lys Val Ser Arg Asn Leu Tyr Leu Ser Leu Gly Ile Phe Leu Pro Leu
 115 120 125
 Ile Ala Val Asn Cys Ala Ile Leu Gly Gly Val Leu Phe Gly Ile Thr
 130 135 140
 Arg Ser Tyr Pro Phe Ile Pro Met Met Ile Phe Ser Leu Gly Ala Gly
 145 150 155 160
 Cys Gly Trp Trp Leu Ala Ile Val Ile Leu Ala Thr Ile Lys Glu Lys
 165 170 175
 Leu Ala Tyr Ser Asp Ile Pro Lys Asn Leu Gln Gly Met Gly Ile Ser
 180 185 190
 Phe Ile Thr Thr Gly Leu Ile Ala Met Ala Phe Met Ser Leu Thr Gly
 195 200 205
 Ile Asp Ile Ser Lys Pro Ser Ala Lys Ile Gln Arg Ala Pro Leu Glu
 210 215 220
 Thr Glu Val Val Glu Asn Thr Thr Asn Pro Leu Lys Glu Ser Ser Ser
 225 230 235 240
 Lys His Gln Pro Ser Ile Ser Lys Ala Arg Thr Gln Arg Arg Ser Leu
 245 250 255

<210>450

<211>113

<212>PRT

<213>Chlamydia pneumoniae

<400>450

Lys Ile Met Thr Thr Leu Pro Lys Tyr Val Pro Arg Ser Arg Gln Asn
 1 5 10 15
 Pro Asp Thr Leu Thr Phe Leu Lys Arg Tyr Ser Ser Val Leu Leu His
 20 25 30
 Ser Glu Asn Ser Leu Ser Tyr Arg Ile Phe Ala Lys Val Leu Ala Ile
 35 40 45
 Leu Leu Thr Ser Leu Ala Val Ala Phe Ala Val Thr Leu Phe Ser Cys
 50 55 60
 Glu Gly Ser Gln Leu Arg Leu Cys Ala Leu Tyr Ile Gly Ile Ala Leu
 65 70 75 80
 Ala Ile Cys Val Leu Leu Thr Ile Val Val Tyr Cys Ile Ala Ser Lys
 85 90 95
 Ile Ala Thr Ala Cys Lys Lys Pro Pro Ser Ile Ser Arg Ile Glu Ile
 100 105 110
 Val

<210>451

<211>436

<212>PRT

<213>Chlamydia pneumoniae

<400>451

Gly Glu Xaa Ala Tyr Thr Lys Ile Ser Lys Asn Lys Glu Phe Ser Leu
 1 5 10 15
 Gly Phe Glu Glu Phe Val Asn Ser Tyr Phe Gln Phe Leu Glu Ile Ser
 20 25 30
 Glu Ser Glu Phe Phe Asn Met Tyr Arg Asp Ile Leu Leu Cys Lys Arg

35 40 45
 Ala Leu Leu Leu Leu Gln Gly Gly Val Ser Phe Asp Phe Gln Pro Leu
 50 55 60
 Thr Thr Phe Phe Val Gln Gly Lys Asp Ser Ile Gln Val Glu Phe Phe
 65 70 75 80
 Arg Leu Pro Lys Glu Tyr Ser Phe Lys Thr Lys Gln Glu Leu Lys Ala
 85 90 95
 Phe Glu Val Tyr Leu Lys Leu Val Ser Leu Pro Lys Ser Asp Ser Leu
 100 105 110
 Asp Val Pro Asn Glu Ile Leu Pro Ile Ala Thr Ile Lys Ala Lys Glu
 115 120 125
 Pro Arg Leu Val Gly Arg Arg Phe Ser Ile Asp Tyr Lys Arg Val Ala
 130 135 140
 Leu Gln Asp Leu Ala Ala Thr Val Pro Met Val Glu Val Leu His Trp
 145 150 155 160
 Gln Gln Asn Ser Glu His Phe Gln Glu Ile Leu Gln Gln Phe Pro Asp
 165 170 175
 Val Glu Thr Cys Gln Ser Tyr Lys Asp Phe Gln His Leu Lys Pro Ala
 180 185 190
 Leu Arg Asp Lys Ile Ser Leu Phe Thr Arg Lys Glu Ile Leu Arg Ala
 195 200 205
 Arg Pro Glu Arg Ile Leu Gln Ser Leu Gln Gln Val Pro Lys Gln Ser
 210 215 220
 Gln Glu Val Leu Leu Ser Ala Gly Lys Asn Ser Ala Leu Pro Gly Ile
 225 230 235 240
 Ser Asp Gly Gln Gln Leu Ala Lys Val Leu Leu Glu Asn Glu Val Leu
 245 250 255
 Asp Leu Tyr Ser Gln Asp Ala Glu Thr Tyr Tyr Thr Ile Ile Val Asn
 260 265 270
 Ser Ser Phe Glu Lys Glu Glu Val Leu Pro Tyr Arg Glu Val Leu Lys
 275 280 285
 Arg Asp Leu Ala Ser Gln Leu Leu Thr Ser His Gly His Leu Val Asp
 290 295 300
 Met Glu Arg Leu Glu Ser Ala Leu Arg Thr Arg Tyr Pro Gly Glu Glu
 305 310 315 320
 Gly Ala Ser Leu Trp Gln Arg Arg Leu Trp Lys Val Val Glu Asn His
 325 330 335
 Arg Leu Gly Arg His Leu Glu Gly Ser Phe Ser Trp Ser Leu Asp Arg
 340 345 350
 Ser Leu Lys Thr Phe Ser Arg Gly Asp Lys Glu Leu Pro Gln Glu Phe
 355 360 365
 Asp Arg Ile Phe Ser Met Lys Val Gly Asp Tyr Ser Ser Val Phe Met
 370 375 380
 Ser Pro Asn Glu Gly Pro Cys Tyr Tyr Gln Cys Leu Ser His Leu Leu
 385 390 395 400
 Tyr Asp Arg Pro Ala Ser Val Asp Lys Leu Phe Leu Ala Lys Ser Gln
 405 410 415
 Leu Asp Glu Glu Leu Leu Gly Ser Tyr Met Glu Arg Phe Ile Glu Gln
 420 425 430
 Gly Val Val Arg
 435

<210>452

<211>84

<212>PRT

<213>Chlamydia pneumoniae

<400>452

Ser Gln Ala Leu Phe Arg Arg Glu Lys Val Pro Ser Leu Cys Ala Ser
 1 5 10 15
 Thr Asn Val Gly Val Pro Gln Gln Met Phe Ala Leu Pro Pro Asp Glu
 20 25 30
 Ala Leu Ser Arg Gly Lys Asp Leu Arg Leu Phe Gly Tyr Gln Thr Ile
 35 40 45
 Gln Asp Trp Phe Gly Asp Ala Tyr Leu Ser Ala Ala Val Glu Leu Leu
 50 55 60

Ile Arg Phe Ile Asp Glu Gln Lys Lys Val Leu Pro Arg Pro Ser Lys
 65 70 75 80
 Gln Glu Ser Ser

<210>453

<211>269

<212>PRT

<213>Chlamydia pneumoniae

<400>453

Arg Pro Trp Val Arg Ile Tyr Gln Gln Asp Leu Phe Cys Arg Leu Cys
 1 5 10 15
 Arg Asp Pro Ala Trp Phe Phe Ser Leu Leu Ser Phe Thr Leu Arg Phe
 20 25 30
 Tyr Cys Leu Gly Arg Gly Trp Thr Leu Leu Ser Phe Phe Tyr Lys His
 35 40 45
 Gln Lys Lys Phe Ile Gly Ile Val Ile Ala Val Val Cys Val Ser Gly
 50 55 60
 Ile Gly Val Gly Trp Gly Arg Phe Ser Arg Lys Gly Ser Ala Glu Ser
 65 70 75 80
 Thr Ser Arg Arg Thr Val Phe Thr Thr Ala Ser Gly Lys Arg Tyr Val
 85 90 95
 Glu Lys Asp Phe Met Ala Met Lys Lys Phe Phe Ala His Glu Ala Tyr
 100 105 110
 Pro Phe Thr Gly Asn Pro Arg Ala Trp Asn Phe Ile Asn Glu Gly Leu
 115 120 125
 Leu Thr Asp Tyr Phe Leu Thr Thr Arg Val Gly Glu Lys Leu Phe Leu
 130 135 140
 Lys Val Tyr His Pro Gly Glu Lys Ile Phe Ser Lys Glu Lys Ala Tyr
 145 150 155 160
 Gln Pro Tyr Arg Arg Phe Asp Ala Pro Phe Ile Ser Ser Glu Glu Val
 165 170 175
 Trp Lys Ser Ser Ala Pro Gln Leu Leu Glu Ile Leu Lys Val Phe Gln
 180 185 190
 Gln Ile Glu Asn Pro Ile Ser Lys Glu Gly Phe Leu Ala Arg Ala Lys
 195 200 205
 Leu Phe Leu Glu Glu Arg Arg Phe Pro His Tyr Val Leu Arg Gln Met
 210 215 220
 Leu Glu Tyr Arg Ser Lys Cys Leu Leu Phe Pro Gln Met Lys Pro Tyr
 225 230 235 240
 Leu Ala Gly Lys Thr Cys Gly Tyr Leu Ala Thr Arg Arg Phe Lys Thr
 245 250 255
 Gly Leu Gly Met Pro Thr Phe Leu Leu Leu Ser Ser
 260 265

<210>454

<211>196

<212>PRT

<213>Chlamydia pneumoniae

<400>454

Ala Thr Gln Ser Trp Thr Gln Glu Tyr Leu Lys Leu Ile Gln Gly Ala
 1 5 10 15
 Arg Ser Ser Val Lys Leu Ala His Met Tyr Phe Ile Pro Lys Asp Glu
 20 25 30
 Leu Leu Asn Ala Leu Val Asp Val Ser His Asn His Gly Val His Leu
 35 40 45
 Ser Leu Ile Thr Asn Gly Cys His Glu Leu Ser Pro Ala Ile Thr Gly
 50 55 60
 Pro Tyr Ala Trp Gly Asn Arg Ile Asn Tyr Phe Ala Leu Leu Tyr Gly
 65 70 75 80
 Lys Arg Tyr Pro Leu Trp Lys Lys Trp Phe Cys Glu Lys Leu Lys Pro
 85 90 95
 Tyr Glu Arg Val Ser Ile Tyr Glu Phe Ala Ile Trp Glu Thr Gln Leu
 100 105 110
 His Lys Lys Cys Met Ile Ile Asp Asp Glu Ile Phe Val Ile Gly Ser
 115 120 125

Tyr Asn Phe Gly Lys Lys Ser Asp Ala Phe Asp Tyr Glu Ser Ile Val
 130 135 140
 Val Ile Glu Ser Pro Glu Val Ala Ala Lys Ala Asn Lys Val Phe Asn
 145 150 155 160
 Lys Asp Ile Gly Leu Ser Ile Pro Val Ser His Gly Asp Ile Phe Ser
 165 170 175
 Trp Tyr Phe His Ser Val His His Thr Leu Gly His Leu Gln Leu Thr
 180 185 190
 Tyr Met Pro Ala
 195

<210>455

<211>214

<212>PRT

<213>Chlamydia pneumoniae

<400>455

Arg Asp Gly Lys Ile Thr Ser Arg Leu Val Trp Ile Trp Phe Gln Ser
 1 5 10 15
 Ser Val Ala Asn Ile Ile Ile Gln Pro Thr Phe Thr Asp Ala Glu Asp
 20 25 30
 Gln Lys Leu Leu Lys Ala Leu Lys Glu Arg His Pro Asn Arg Phe Phe
 35 40 45
 Tyr Val Phe Thr Gly Cys Pro Pro Ser Thr Ser Ile Leu Ala Pro Asn
 50 55 60
 Val Ile Glu Met His Ile Lys Leu Ser Ile Ile Asp Gly Lys Tyr Cys
 65 70 75 80
 Ile Leu Gly Gly Thr Asn Phe Glu Glu Phe Met Cys Thr Pro Gly Asp
 85 90 95
 Glu Val Pro Glu Lys Val Asp Asn Pro Arg Leu Phe Val Ser Gly Val
 100 105 110
 Arg Arg Pro Leu Ala Phe Arg Asp Gln Asp Ile Met Leu Arg Ser Thr
 115 120 125
 Ala Phe Gly Leu Gln Leu Arg Glu Glu Tyr His Lys Gln Phe Ala Met
 130 135 140
 Trp Asp Tyr Tyr Ala His His Met Trp Phe Ile Asp Asn Pro Glu Gln
 145 150 155 160
 Phe Ala Gly Ala Cys Pro Pro Leu Thr Leu Glu Gln Ala Glu Glu Thr
 165 170 175
 Val Phe Pro Gly Phe Asp Lys His Glu Asp Leu Val Leu Val Asp Ser
 180 185 190
 Ser Lys Ile Arg Ile Val Leu Gly Gly Pro His Asp Lys Gln Pro Asn
 195 200 205
 Pro Gly Leu Lys Asn Ile
 210

<210>456

<211>95

<212>PRT

<213>Chlamydia pneumoniae

<400>456

Gly Val Met Met Ser Arg Leu Arg Phe Arg Leu Ala Ala Leu Gly Ile
 1 5 10 15
 Phe Phe Ile Leu Leu Val Pro Asn Ser Val Ser Ala Lys Thr Ile Val
 20 25 30
 Ala Ser Asp Lys Glu Lys Val Gly Val Leu Val Tyr Asp Asn Ser Val
 35 40 45
 Glu Ala Phe Gln Gln Ile Leu Asp Cys Ile Asp His Ala Asn Phe Tyr
 50 55 60
 Val Glu Leu Cys Pro Cys Met Thr Gly Gly Arg Thr Leu Lys Glu Met
 65 70 75 80
 Val Arg Ser Pro Arg Gly Ser Tyr Gly Ser Gly Ser Arg Ala Leu
 85 90 95

<210>457

<211>244

<212>PRT

<213>Chlamydia pneumoniae

<400>457

Phe Tyr Val Cys Tyr Met Lys Val Arg Ile Val Asp Ser Gly Lys Ser
 1 5 10 15
 Ser Ala Ala Ser His Met Ala Lys Asp Arg Asp Leu Leu Glu Ser Leu
 20 25 30
 Gln Asp Gly Glu Leu Ile Leu His Leu Tyr Glu Trp Glu Asn Pro Cys
 35 40 45
 Ser Leu Thr Tyr Gly His Phe Met Arg Pro Glu Lys Phe Leu Leu Ser
 50 55 60
 Asn Tyr Ala Asp Leu Gly Leu Asp Ala Ala Val Arg Pro Thr Gly Gly
 65 70 75 80
 Gly Phe Val Phe His Lys Gly Asp Tyr Ala Phe Ser Val Leu Met Ser
 85 90 95
 Ala Thr His Pro Ser Tyr Ser Ser Ser Val Leu Glu Asn Tyr His Thr
 100 105 110
 Val Asn Ser Phe Val Ala Lys Val Leu Glu Lys Val Phe Arg Ile Gln
 115 120 125
 Gly Met Leu Ala Pro Glu Asp Glu Asn Ser Ser Ser Arg Asp Ser Gly
 130 135 140
 Asn Phe Cys Met Ala Lys Thr Ser Lys Tyr Asp Val Leu Xaa Trp Gly
 145 150 155 160
 Gln Glu Asp Arg Gly Ala Ala Gln Arg Lys Val Gln Gln Gly Phe Leu
 165 170 175
 His Gln Gly Ser Leu Phe Leu Ser Gly Ser Ser Ser Glu Phe Tyr Gln
 180 185 190
 Arg Phe Leu Lys Pro Glu Val Leu Glu Glu Ile Ile Glu Gln Ile Gln
 195 200 205
 Ile His Ala Phe Phe Pro Leu Gly Leu Glu Ala Ala Asp Glu Val Leu
 210 215 220
 Gln Glu Ala Arg Gln Gln Val Lys Glu Ala Phe Ile Lys Leu Phe Cys
 225 230 235 240
 Gly Glu Gly Leu

<210>458

<211>845

<212>PRT

<213>Chlamydia pneumoniae

<400>458

Met Phe Glu Lys Phe Thr Asn Arg Ala Lys Gln Val Ile Lys Leu Ala
 1 5 10 15
 Lys Lys Glu Ala Gln Arg Leu Asn His Asn Tyr Leu Gly Thr Glu His
 20 25 30
 Ile Leu Leu Gly Leu Leu Lys Leu Gly Gln Gly Val Ala Val Asn Val
 35 40 45
 Leu Arg Asn Leu Gly Ile Asp Phe Asp Thr Ala Arg Gln Glu Val Glu
 50 55 60
 Arg Leu Ile Gly Tyr Gly Pro Glu Ile Gln Val Tyr Gly Asp Ala Ala
 65 70 75 80
 Leu Thr Gly Arg Val Lys Lys Ser Phe Glu Ser Ala Asn Glu Glu Ala
 85 90 95
 Ser Leu Leu Glu His Asn Tyr Val Gly Thr Glu His Leu Leu Gly
 100 105 110
 Ile Leu His Gln Ser Asp Ser Val Ala Leu Gln Val Leu Glu Asn Leu
 115 120 125
 His Ile Asp Pro Arg Glu Val Arg Lys Glu Ile Leu Lys Glu Leu Glu
 130 135 140
 Thr Phe Asn Leu Gln Leu Pro Pro Ser Ser Ser Ser Ser Ser Ser
 145 150 155 160
 Ser Arg Ser Asn Pro Ser Ser Ser Lys Ser Pro Leu Gly Gln Ser Leu
 165 170 175
 Gly Ser Asp Lys Asn Glu Lys Leu Ser Ala Leu Lys Ala Tyr Gly Tyr
 180 185 190
 Asp Leu Thr Glu Met Val Arg Glu Ser Lys Leu Asp Pro Val Ile Gly
 195 200 205

Arg Ser Ser Glu Val Glu Arg Leu Ile Leu Ile Leu Cys Arg Arg Arg
 210 215 220
 Lys Asn Asn Pro Val Leu Ile Gly Glu Ala Gly Val Gly Lys Thr Ala
 225 230 235 240
 Ile Val Glu Gly Leu Ala Gln Lys Ile Ile Leu Asn Glu Val Pro Asp
 245 250 255
 Ala Leu Arg Lys Lys Arg Leu Ile Thr Leu Asp Leu Ala Leu Met Ile
 260 265 270
 Ala Gly Thr Lys Tyr Arg Gly Gln Phe Glu Glu Arg Ile Lys Ala Val
 275 280 285
 Met Asp Glu Val Arg Lys His Gly Asn Ile Leu Leu Phe Ile Asp Glu
 290 295 300
 Leu His Thr Ile Val Gly Ala Gly Ala Ala Glu Gly Ala Ile Asp Ala
 305 310 315 320
 Ser Asn Ile Leu Lys Pro Ala Leu Ala Arg Gly Glu Ile Gln Cys Ile
 325 330 335
 Gly Ala Thr Thr Ile Asp Glu Tyr Arg Lys His Ile Glu Lys Asp Ala
 340 345 350
 Ala Leu Glu Arg Arg Phe Gln Lys Ile Val Val His Pro Pro Ser Val
 355 360 365
 Asp Glu Thr Ile Glu Ile Leu Arg Gly Leu Lys Lys Lys Tyr Glu Glu
 370 375 380
 His His Asn Val Phe Ile Thr Glu Glu Ala Leu Lys Ala Ala Thr
 385 390 395 400
 Leu Ser Asp Gln Tyr Val His Gly Arg Phe Leu Pro Asp Lys Ala Ile
 405 410 415
 Asp Leu Leu Asp Glu Ala Gly Ala Arg Val Arg Val Asn Thr Met Gly
 420 425 430
 Gln Pro Thr Asp Leu Met Lys Leu Glu Ala Glu Ile Glu Asn Thr Lys
 435 440 445
 Leu Ala Lys Glu Gln Ala Ile Gly Thr Gln Glu Tyr Glu Lys Ala Ala
 450 455 460
 Gly Leu Arg Asp Glu Glu Lys Lys Leu Arg Glu Arg Leu Gln Ser Met
 465 470 475 480
 Lys Gln Glu Trp Glu Asn His Lys Glu Glu His Gln Val Pro Val Asp
 485 490 495
 Glu Glu Ala Val Ala Gln Val Val Ser Leu Gln Thr Gly Ile Pro Ser
 500 505 510
 Ala Arg Leu Thr Glu Ala Glu Ser Glu Lys Leu Leu Lys Leu Glu Asp
 515 520 525
 Thr Leu Arg Arg Lys Val Ile Gly Gln Asn Asp Ala Val Thr Ser Ile
 530 535 540
 Cys Arg Ala Ile Arg Arg Ser Arg Thr Gly Ile Lys Asp Pro Asn Arg
 545 550 555 560
 Pro Thr Gly Ser Phe Leu Phe Leu Gly Pro Thr Gly Val Gly Lys Ser
 565 570 575
 Leu Leu Ala Gln Gln Ile Ala Ile Glu Met Phe Gly Gly Glu Asp Ala
 580 585 590
 Leu Ile Gln Val Asp Met Ser Glu Tyr Met Glu Lys Phe Ala Ala Thr
 595 600 605
 Lys Met Met Gly Ser Pro Pro Gly Tyr Val Gly His Glu Glu Gly Gly
 610 615 620
 His Leu Thr Glu Gln Val Arg Arg Arg Pro Tyr Cys Val Val Leu Phe
 625 630 635 640
 Asp Glu Ile Glu Lys Ala His Pro Asp Ile Met Asp Leu Met Leu Gln
 645 650 655
 Ile Leu Glu Gln Gly Arg Leu Thr Asp Ser Phe Gly Arg Lys Val Asp
 660 665 670
 Phe Arg His Ala Ile Ile Ile Met Thr Ser Asn Leu Gly Ala Asp Leu
 675 680 685
 Ile Arg Lys Ser Gly Glu Ile Gly Phe Gly Leu Lys Ser His Met Asp
 690 695 700
 Tyr Lys Val Ile Gln Glu Lys Ile Glu His Ala Met Lys Lys His Leu
 705 710 715 720

Lys Pro Glu Phe Ile Asn Arg Leu Asp Glu Ser Val Ile Phe Arg Pro
 725 730 735
 Leu Glu Lys Glu Ser Leu Ser Glu Ile Ile His Leu Glu Ile Asn Lys
 740 745 750
 Leu Asp Ser Arg Leu Lys Asn Tyr Gln Met Ala Leu Asn Ile Pro Asp
 755 760 765
 Ser Val Ile Ser Phe Leu Val Thr Lys Gly His Ser Pro Glu Met Gly
 770 775 780
 Ala Arg Pro Leu Arg Arg Val Ile Glu Gln Tyr Leu Glu Asp Pro Leu
 785 790 795 800
 Ala Glu Leu Leu Lys Glu Ser Cys Arg Gln Glu Ala Arg Lys Leu
 805 810 815
 Arg Ala Thr Leu Val Glu Asn Arg Val Ala Phe Glu Arg Glu Glu
 820 825 830
 Glu Gln Glu Ala Ala Leu Pro Ser Pro His Leu Glu Ser
 835 840 845
 <210>459
 <211>374
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>459
 Asn Leu Thr Leu Pro Met Arg Arg Gln Val Arg Glu Ile Met Gln Gln
 1 5 10 15
 Thr Val Ile Val Ala Met Ser Gly Gly Val Asp Ser Ser Val Val Ala
 20 25 30
 Tyr Leu Phe Lys Lys Phe Thr Asn Tyr Lys Val Ile Gly Leu Phe Met
 35 40 45
 Lys Asn Trp Glu Glu Asp Ser Glu Gly Gly Leu Cys Ser Ser Thr Lys
 50 55 60
 Asp Tyr Glu Asp Val Glu Arg Val Cys Leu Gln Leu Asp Ile Pro Tyr
 65 70 75 80
 Tyr Thr Val Ser Phe Ala Lys Glu Tyr Arg Glu Arg Val Phe Ala Arg
 85 90 95
 Phe Leu Lys Glu Tyr Ser Leu Gly Tyr Thr Pro Asn Pro Asp Ile Leu
 100 105 110
 Cys Asn Arg Glu Ile Lys Phe Asp Leu Leu Gln Lys Lys Val Gln Glu
 115 120 125
 Leu Gly Gly Asp Tyr Leu Ala Thr Gly His Tyr Cys Arg Leu Asn Thr
 130 135 140
 Glu Leu Gln Glu Thr Gln Leu Leu Arg Gly Cys Asp Pro Gln Lys Asp
 145 150 155 160
 Gln Ser Tyr Phe Leu Ser Gly Thr Pro Lys Ser Ala Leu His Asn Val
 165 170 175
 Leu Phe Pro Leu Gly Glu Met Asn Lys Thr Glu Val Arg Ala Ile Ala
 180 185 190
 Ala Gln Ala Ala Leu Pro Thr Ala Glu Lys Lys Asp Ser Thr Gly Ile
 195 200 205
 Cys Phe Ile Gly Lys Arg Pro Phe Lys Glu Phe Leu Glu Lys Phe Leu
 210 215 220
 Pro Asn Lys Thr Gly Asn Val Ile Asp Trp Asp Thr Lys Glu Ile Val
 225 230 235 240
 Gly Gln His Gln Gly Ser His Tyr Tyr Thr Ile Gly Gln Arg Arg Gly
 245 250 255
 Leu Asp Leu Gly Gly Ser Glu Lys Pro Xaa Tyr Val Val Gly Lys Asn
 260 265 270
 Ile Glu Glu Asn Ser Ile Tyr Ile Val Arg Gly Glu Asp His Pro Gln
 275 280 285
 Leu Tyr Leu Arg Glu Leu Thr Ala Arg Glu Leu Asn Trp Phe Thr Pro
 290 295 300
 Pro Lys Ser Gly Cys His Cys Ser Ala Lys Val Arg Tyr Arg Ser Pro
 305 310 315 320
 Asp Glu Ala Cys Thr Ile Asp Tyr Ser Ser Gly Asp Glu Val Lys Val
 325 330 335
 Arg Phe Ser Gln Pro Val Lys Ala Val Thr Pro Gly Gln Thr Ile Ala

340 345 350
 Phe Tyr Gln Gly Asp Thr Cys Leu Gly Ser Gly Val Ile Asp Val Pro
 355 360 365
 Met Ile Pro Ser Glu Gly
 370
 <210>460
 <211>185
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>460
 Ile Ile Ser Ser Asn Asn Arg Val Leu Phe Val Ser Ser Thr Leu Asn
 1 5 10 15
 Gly Val Phe Pro Ser Ser Leu Pro Glu Ser Ala Asp Leu Phe Ile
 20 25 30
 Thr Asn Lys Glu Ile Val Ala Leu Gly Glu Lys Gly Asn Val Phe Leu
 35 40 45
 Thr His Ser Ile Pro Met His Ile Ala Ala Ile Thr Ile Leu Val Ile
 50 55 60
 Val Ala Leu Ala Gly Ile Ala Ile Ile Cys Leu Gly Cys Tyr Ser Gln
 65 70 75 80
 Ser Ile Leu Leu Ile Ala Val Gly Ile Val Leu Thr Ile Leu Thr Leu
 85 90 95
 Leu Cys Leu Gln Ala Leu Val Gly Phe Ile Lys Phe Ile Arg Gln Leu
 100 105 110
 Pro Gln Gln Leu His Thr Thr Val Gln Phe Ile Arg Glu Lys Ile Arg
 115 120 125
 Pro Glu Ser Ser Leu Gln Leu Val Thr Asn Ala Gln Arg Lys Thr Thr
 130 135 140
 Gln Asp Thr Leu Lys Leu Tyr Glu Glu Leu Cys Asp Leu Ser Gln Lys
 145 150 155 160
 Glu Phe Lys Leu Gln Ser Thr Leu Tyr Gln Lys Arg Phe Glu Leu Ser
 165 170 175
 His Lys Asn Glu Lys Thr Asn Gln Asn
 180 185
 <210>461
 <211>220
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>461
 Leu Ala Thr Ile Arg Gly Asn Asn Met Ala Thr Ser Val Ala Pro Ser
 1 5 10 15
 Pro Val Pro Glu Ser Ser Pro Leu Ser His Ala Thr Glu Val Leu Asn
 20 25 30
 Leu Pro Asn Ala Tyr Ile Thr Gln Pro His Pro Ile Pro Ala Ala Pro
 35 40 45
 Trp Glu Thr Phe Arg Ser Lys Leu Ser Thr Lys His Thr Leu Cys Phe
 50 55 60
 Ala Leu Thr Leu Leu Leu Thr Leu Gly Gly Thr Ile Ser Ala Gly Tyr
 65 70 75 80
 Ala Gly Tyr Thr Gly Asn Trp Ile Ile Cys Gly Ile Gly Leu Gly Ile
 85 90 95
 Ile Val Leu Thr Leu Ile Leu Ala Leu Leu Leu Ala Ile Pro Leu Lys
 100 105 110
 Asn Lys Gln Thr Gly Thr Lys Leu Ile Asp Glu Ile Ser Gln Asp Ile
 115 120 125
 Ser Ser Ile Gly Ser Gly Phe Val Gln Arg Tyr Gly Leu Met Phe Ser
 130 135 140
 Thr Ile Lys Ser Val His Leu Pro Glu Leu Thr Thr Gln Asn Gln Glu
 145 150 155 160
 Lys Thr Arg Ile Leu Asn Glu Ile Glu Ala Lys Lys Glu Ser Ile Gln
 165 170 175
 Asn Leu Glu Leu Lys Ile Thr Glu Cys Gln Asn Lys Leu Ala Gln Lys
 180 185 190
 Gln Pro Lys Arg Lys Ser Ser Gln Lys Ser Phe Met Arg Ser Ile Lys

195 200 205
 His Leu Ser Lys Asn Pro Val Ile Leu Phe Asp Cys
 210 215 220
 <210>462
 <211>159
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>462
 Arg Trp Arg Ile Leu Gln Asn Met Phe Lys Leu Leu Phe His Ile Ala
 1 5 10 15
 Ala Phe Ala Gly His Val Leu Ser Thr Pro Ile Phe Ile Val Gln Asp
 20 25 30
 Ala Cys Gly Ile Asp Glu Glu Ala Cys Lys Asn Pro Pro Pro Arg Pro
 35 40 45
 Phe Ser Ala Gln Val Gln Tyr Leu Lys Val Asn Asp Ala Lys Phe Lys
 50 55 60
 Lys Leu Pro His Gln Thr Ile Gly Tyr Arg Gln Tyr Asp Gly Thr Phe
 65 70 75 80
 Leu Cys Thr Leu Pro Ile Thr Glu His Ser Gly Leu Leu Phe Ser Thr
 85 90 95
 Gly Tyr Ile Gly Ala Asp Ile Gln Trp Lys Ser Ser Leu Pro Ile Ser
 100 105 110
 Glu Thr Asp Pro Asn Gly Leu Gly Trp Ala Thr Phe Gln Asp Thr Ser
 115 120 125
 Phe Tyr Asn Tyr Val Leu Leu Ser Leu Gly Ala Tyr Thr Leu Ser Xaa
 130 135 140
 Lys Lys Leu Ala Val Val Tyr His Ser Phe Trp Ala Cys Gly Ser
 145 150 155
 <210>463
 <211>186
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>463
 Glu Leu Ile His Ser Pro Leu Lys Asn Trp Gln Trp Ser Ile Ile Leu
 1 5 10 15
 Ser Gly Leu Val Asp Pro Lys Asn Ile Glu Met Gly Tyr Gly Leu Tyr
 20 25 30
 Gln Gly Val Leu Ser Gly Lys Tyr Gln Ala Thr Glu Lys Leu Ser Ala
 35 40 45
 Ile Phe Gly Val Ile Asn Glu Thr Gly Leu His Gln Glu Lys Ala Trp
 50 55 60
 Pro Leu Val Gly Val Ser Tyr Lys Ala Thr Asp Gln Leu Thr Leu Asn
 65 70 75 80
 Cys Ile Tyr Pro Val Asn Phe Ser Ile Asp Tyr Arg Ser Thr Ser Val
 85 90 95
 Cys Asn Leu Gly Leu Ala Tyr Arg Leu Thr Arg Phe Arg Lys Lys Leu
 100 105 110
 Tyr Lys Asn His Leu Ile Ser Ser Arg Gly Ile Phe Glu Tyr Gln Gly
 115 120 125
 Arg Glu Ile Glu Ala Asn Val Lys Leu Thr Pro Trp Pro Gly Ser Phe
 130 135 140
 Ile Lys Gly Phe Tyr Gly Trp Ser Ile Gly Asn Asp Ile Ser Ile Ala
 145 150 155 160
 Asp Asp His Asn Asn Asn Lys Thr Ser His Thr Phe Lys Thr Ser Ala
 165 170 175
 Phe Phe Gly Gly Ser Ala Val Met Asn Phe
 180 185
 <210>464
 <211>127
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>464
 Val Asp Ser Met Ser Gln Pro Pro Ile Asn Pro Leu Gly Gln Pro Gln
 1 5 10 15

Val Pro Ala Ala Ala Ser Pro Ser Gly Gln Pro Ser Val Val Lys Arg
 20 25 30
 Leu Lys Thr Ser Ser Thr Gly Leu Phe Lys Arg Phe Ile Thr Val Pro
 35 40 45
 Asp Lys Tyr Pro Lys Met Arg Tyr Val Tyr Asp Thr Gly Ile Ile Ala
 50 55 60
 Leu Ala Ala Ile Ala Ile Leu Ser Ile Leu Leu Thr Ala Ser Gly Asn
 65 70 75 80
 Ser Leu Met Leu Tyr Ala Leu Ala Pro Ala Leu Ala Leu Gly Ala Leu
 85 90 95
 Gly Val Thr Leu Leu Ile Ser Asp Ile Leu Asp Ser Pro Lys Pro Arg
 100 105 110
 Lys Ser Val Arg Gln Ser Leu Leu Ser Ser Phe Leu Ser Leu Tyr
 115 120 125

<210>465

<211>91

<212>PRT

<213>Chlamydia pneumoniae

<400>465

Tyr Ser Gly Gln Ser Glu Ala Lys Lys Ile Gly Glu Ala Ile Thr Ala
 1 5 10 15
 Ile Val Val Pro Ile Ile Val Leu Ala Ile Ala Ala Gly Leu Ile Ala
 20 25 30
 Gly Ala Phe Val Ala Ser Ser Gly Thr Met Leu Val Phe Ala Asn Pro
 35 40 45
 Met Phe Val Met Gly Leu Ile Thr Val Gly Leu Tyr Phe Met Ser Leu
 50 55 60
 Asn Lys Leu Thr Leu Asp Tyr Phe Arg Arg Glu His Leu Leu Arg Met
 65 70 75 80
 Glu Lys Lys Thr Gln Glu Thr Ala Asp Leu Phe
 85 90

<210>466

<211>1132

<212>PRT

<213>Chlamydia pneumoniae

<400>466

Met Lys Tyr Ser Leu Pro Trp Leu Leu Thr Ser Ser Ala Leu Val Phe
 1 5 10 15
 Ser Leu His Pro Leu Met Ala Ala Asn Thr Asp Leu Ser Ser Ser Asp
 20 25 30
 Asn Tyr Glu Asn Gly Ser Ser Gly Ser Ala Ala Phe Thr Ala Lys Glu
 35 40 45
 Thr Ser Asp Ala Ser Gly Thr Thr Tyr Thr Leu Thr Ser Asp Val Ser
 50 55 60
 Ile Thr Asn Val Ser Ala Ile Thr Pro Ala Asp Lys Ser Cys Phe Thr
 65 70 75 80
 Asn Thr Gly Gly Ala Leu Ser Phe Val Gly Ala Asp His Ser Leu Val
 85 90 95
 Leu Gln Thr Ile Ala Leu Thr His Asp Gly Ala Ala Ile Asn Asn Thr
 100 105 110
 Asn Thr Ala Leu Ser Phe Ser Gly Phe Ser Ser Leu Leu Ile Asp Ser
 115 120 125
 Ala Pro Ala Thr Gly Thr Ser Gly Gly Lys Gly Ala Ile Cys Val Thr
 130 135 140
 Asn Thr Glu Gly Gly Thr Ala Thr Phe Thr Asp Asn Ala Ser Val Thr
 145 150 155 160
 Leu Gln Lys Asn Thr Ser Glu Lys Asp Gly Ala Ala Val Ser Ala Tyr
 165 170 175
 Ser Ile Asp Leu Ala Lys Thr Thr Thr Ala Ala Leu Leu Asp Gln Asn
 180 185 190
 Thr Ser Thr Lys Asn Gly Gly Ala Leu Cys Ser Thr Ala Asn Thr Thr
 195 200 205
 Val Gln Gly Asn Ser Gly Thr Val Thr Phe Ser Ser Asn Thr Ala Thr
 210 215 220

Asp Lys Gly Gly Gly Ile Tyr Ser Lys Glu Lys Asp Ser Thr Leu Asp
 225 230 235 240
 Ala Asn Thr Gly Val Val Thr Phe Lys Ser Asn Thr Ala Lys Thr Gly
 245 250 255
 Gly Ala Trp Ser Ser Asp Asp Asn Leu Ala Leu Thr Gly Asn Thr Gln
 260 265 270
 Val Leu Phe Gln Glu Asn Lys Thr Thr Gly Ser Ala Ala Gln Ala Asn
 275 280 285
 Asn Pro Glu Gly Cys Gly Gly Ala Ile Cys Cys Tyr Leu Ala Thr Ala
 290 295 300
 Thr Asp Lys Thr Gly Leu Ala Ile Ser Gln Asn Gln Glu Met Ser Phe
 305 310 315 320
 Thr Ser Asn Thr Thr Thr Ala Asn Gly Gly Ala Ile Tyr Ala Thr Lys
 325 330 335
 Cys Thr Leu Asp Gly Asn Thr Thr Leu Thr Phe Asp Gln Asn Thr Ala
 340 345 350
 Thr Ala Gly Cys Gly Gly Ala Ile Tyr Thr Glu Thr Glu Asp Phe Ser
 355 360 365
 Leu Lys Gly Ser Thr Gly Thr Val Thr Phe Ser Thr Asn Thr Ala Lys
 370 375 380
 Thr Gly Gly Ala Leu Tyr Ser Lys Glu Asn Ser Ser Leu Thr Gly Asn
 385 390 395 400
 Thr Asn Leu Leu Phe Ser Gly Asn Lys Ala Thr Gly Pro Ser Asn Ser
 405 410 415
 Ser Ala Asn Gln Glu Gly Cys Gly Gly Ala Ile Leu Ser Phe Leu Glu
 420 425 430
 Ser Ala Ser Val Ser Thr Lys Lys Gly Leu Trp Ile Glu Asp Asn Glu
 435 440 445
 Asn Val Ser Leu Ser Gly Asn Thr Ala Thr Val Ser Gly Gly Ala Ile
 450 455 460
 Tyr Ala Thr Lys Cys Ala Leu His Gly Asn Thr Thr Leu Thr Phe Asp
 465 470 475 480
 Gly Asn Thr Ala Glu Thr Ala Gly Gly Ala Ile Tyr Thr Glu Thr Glu
 485 490 495
 Asp Phe Thr Leu Thr Gly Ser Thr Gly Thr Val Thr Phe Ser Thr Asn
 500 505 510
 Thr Ala Lys Thr Ala Gly Ala Leu His Thr Lys Gly Asn Thr Ser Phe
 515 520 525
 Thr Lys Asn Lys Ala Leu Val Phe Ser Gly Asn Ser Ala Thr Ala Thr
 530 535 540
 Ala Thr Thr Thr Thr Asp Gln Glu Gly Cys Gly Gly Ala Ile Leu Cys
 545 550 555 560
 Asn Ile Ser Glu Ser Asp Ile Ala Thr Lys Ser Leu Thr Leu Thr Glu
 565 570 575
 Asn Glu Ser Leu Ser Phe Ile Asn Asn Thr Ala Lys Arg Ser Gly Gly
 580 585 590
 Gly Ile Tyr Ala Pro Lys Cys Val Ile Ser Gly Ser Glu Ser Ile Asn
 595 600 605
 Phe Asp Gly Asn Thr Ala Glu Thr Ser Gly Gly Ala Ile Tyr Ser Lys
 610 615 620
 Asn Leu Ser Ile Thr Ala Asn Gly Pro Val Ser Phe Thr Asn Asn Ser
 625 630 635 640
 Gly Gly Lys Gly Gly Ala Ile Tyr Ile Ala Asp Ser Gly Glu Leu Ser
 645 650 655
 Leu Glu Ala Ile Asp Gly Asp Ile Thr Phe Ser Gly Asn Arg Ala Thr
 660 665 670
 Glu Gly Thr Ser Thr Pro Asn Ser Ile His Leu Gly Ala Gly Ala Lys
 675 680 685
 Ile Thr Lys Leu Ala Ala Ala Pro Gly His Thr Ile Tyr Phe Tyr Asp
 690 695 700
 Pro Ile Thr Met Glu Ala Pro Ala Ser Gly Gly Thr Ile Glu Glu Leu
 705 710 715 720
 Val Ile Asn Pro Val Lys Ala Ile Val Pro Pro Pro Gln Pro Lys
 725 730 735

Asn Gly Pro Ile Ala Ser Val Pro Val Val Pro Val Ala Pro Ala Asn
 740 745 750
 Pro Asn Thr Gly Thr Ile Val Phe Ser Ser Gly Lys Leu Pro Ser Gln
 755 760 765
 Asp Ala Ser Ile Pro Ala Asn Thr Thr Thr Ile Leu Asn Gln Lys Ile
 770 775 780
 Asn Leu Ala Gly Gly Asn Val Val Leu Lys Glu Gly Ala Thr Leu Gln
 785 790 795 800
 Val Tyr Ser Phe Thr Gln Gln Pro Asp Ser Thr Val Phe Met Asp Ala
 805 810 815
 Gly Thr Thr Leu Glu Thr Thr Thr Thr Asn Asn Thr Asp Gly Ser Ile
 820 825 830
 Asp Leu Lys Asn Leu Ser Val Asn Leu Asp Ala Leu Asp Gly Lys Arg
 835 840 845
 Met Ile Thr Ile Ala Val Asn Ser Thr Ser Gly Gly Leu Lys Ile Ser
 850 855 860
 Gly Asp Leu Lys Phe His Asn Asn Glu Gly Ser Phe Tyr Asp Asn Pro
 865 870 875 880
 Gly Leu Lys Ala Asn Leu Asn Leu Pro Phe Leu Asp Leu Ser Ser Thr
 885 890 895
 Ser Gly Thr Val Asn Leu Asp Asp Phe Asn Pro Ile Pro Ser Ser Met
 900 905 910
 Ala Ala Pro Asp Tyr Gly Tyr Gln Gly Ser Trp Thr Leu Val Pro Lys
 915 920 925
 Val Gly Ala Gly Gly Lys Val Thr Leu Val Ala Glu Trp Gln Ala Leu
 930 935 940
 Gly Tyr Thr Pro Lys Pro Glu Leu Arg Ala Thr Leu Val Pro Asn Ser
 945 950 955 960
 Leu Trp Asn Ala Tyr Val Asn Ile His Ser Ile Gln Gln Glu Ile Ala
 965 970 975
 Thr Ala Met Ser Asp Ala Pro Ser His Pro Gly Ile Trp Ile Gly Gly
 980 985 990
 Ile Gly Asn Ala Phe His Gln Asp Lys Gln Lys Glu Asn Ala Gly Phe
 995 1000 1005
 Arg Leu Ile Ser Arg Gly Tyr Ile Val Gly Gly Ser Met Thr Thr Pro
 1010 1015 1020
 Gln Glu Tyr Thr Phe Ala Val Ala Phe Ser Gln Leu Phe Gly Lys Ser
 1025 1030 1035 1040
 Lys Asp Tyr Val Val Ser Asp Ile Lys Ser Gln Val Tyr Ala Gly Ser
 1045 1050 1055
 Leu Cys Ala Gln Ser Ser Tyr Val Ile Pro Leu His Ser Ser Leu Arg
 1060 1065 1070
 Arg His Val Leu Ser Lys Val Leu Pro Glu Leu Pro Gly Glu Thr Pro
 1075 1080 1085
 Leu Val Leu His Gly Gln Val Ser Tyr Gly Arg Asn His His Asn Met
 1090 1095 1100
 Thr Thr Lys Leu Ala Asn Asn Thr Gln Gly Lys Ser Asp Trp Asp Ser
 1105 1110 1115 1120
 His Ser Ser Leu Leu Lys Ser Val Val Leu Phe Leu
 1125 1130

<210>467

<211>154

<212>PRT

<213>Chlamydia pneumoniae

<400>467

Phe Ala Val Glu Val Gly Gly Ser Leu Pro Val Asp Leu Asn Tyr Arg
 1 5 10 15
 Tyr Leu Thr Ser Tyr Ser Pro Tyr Val Lys Leu Gln Val Val Ser Val
 20 25 30
 Asn Gln Lys Gly Phe Gln Glu Val Ala Ala Asp Pro Arg Ile Phe Asp
 35 40 45
 Ala Ser His Leu Val Asn Val Ser Ile Pro Met Gly Leu Thr Phe Lys
 50 55 60
 His Glu Ser Ala Lys Pro Pro Ser Ala Leu Leu Thr Leu Gly Tyr

65 70 75 80
 Ala Val Asp Ala Tyr Arg Asp His Pro His Cys Leu Thr Ser Leu Thr
 85 90 95
 Asn Gly Thr Ser Trp Ser Thr Phe Ala Thr Asn Leu Ser Arg Gln Ala
 100 105 110
 Phe Phe Ala Glu Ala Ser Gly His Leu Lys Leu Leu His Gly Leu Asp
 115 120 125
 Cys Phe Ala Ser Gly Ser Cys Glu Leu Arg Ser Ser Ser Arg Ser Tyr
 130 135 140
 Asn Ala Asn Cys Gly Thr Arg Tyr Ser Phe
 145 150
 <210>468
 <211>671
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>468
 Met Lys Ser Ser Val Ser Trp Leu Phe Phe Ser Ser Ile Pro Leu Phe
 1 5 10 15
 Ser Ser Leu Ser Ile Val Ala Ala Glu Val Thr Leu Asp Ser Ser Asn
 20 25 30
 Asn Ser Tyr Asp Gly Ser Asn Gly Thr Thr Phe Thr Val Phe Ser Thr
 35 40 45
 Thr Asp Ala Ala Ala Gly Thr Thr Tyr Ser Leu Leu Ser Asp Val Ser
 50 55 60
 Phe Gln Asn Ala Gly Ala Leu Gly Ile Pro Leu Ala Ser Gly Cys Phe
 65 70 75 80
 Leu Glu Ala Gly Gly Asp Leu Thr Phe Gln Gly Asn Gln His Ala Leu
 85 90 95
 Lys Phe Ala Phe Ile Asn Ala Gly Ser Ser Ala Gly Thr Val Ala Ser
 100 105 110
 Thr Ser Ala Ala Asp Lys Asn Leu Leu Phe Asn Asp Phe Ser Arg Leu
 115 120 125
 Ser Ile Ile Ser Cys Pro Ser Leu Leu Leu Ser Pro Thr Gly Gln Cys
 130 135 140
 Ala Leu Lys Ser Val Gly Asn Leu Ser Leu Thr Gly Asn Ser Gln Ile
 145 150 155 160
 Ile Phe Thr Gln Asn Phe Ser Ser Asp Asn Gly Gly Val Ile Asn Thr
 165 170 175
 Lys Asn Phe Leu Leu Ser Gly Thr Ser Gln Phe Ala Ser Phe Ser Arg
 180 185 190
 Asn Gln Ala Phe Thr Gly Lys Gln Gly Gly Val Val Tyr Ala Thr Gly
 195 200 205
 Thr Ile Thr Ile Glu Asn Ser Pro Gly Ile Val Ser Phe Ser Gln Asn
 210 215 220
 Leu Ala Lys Gly Ser Gly Gly Ala Leu Tyr Ser Thr Asp Asn Cys Ser
 225 230 235 240
 Ile Thr Asp Asn Phe Gln Val Ile Phe Asp Gly Asn Ser Ala Trp Glu
 245 250 255
 Ala Ala Gln Ala Gln Gly Gly Ala Ile Cys Cys Thr Thr Thr Asp Lys
 260 265 270
 Thr Val Thr Leu Thr Gly Asn Lys Asn Leu Ser Phe Thr Asn Asn Thr
 275 280 285
 Ala Leu Thr Tyr Gly Gly Ala Ile Ser Gly Leu Lys Val Ser Ile Ser
 290 295 300
 Ala Gly Gly Pro Thr Leu Phe Gln Ser Asn Ile Ser Gly Ser Ser Ala
 305 310 315 320
 Gly Gln Gly Gly Gly Ala Ile Asn Ile Ala Ser Ala Gly Glu Leu
 325 330 335
 Ala Leu Ser Ala Thr Ser Gly Asp Ile Thr Phe Asn Asn Asn Gln Val
 340 345 350
 Thr Asn Gly Ser Thr Ser Thr Arg Asn Ala Ile Asn Ile Ile Asp Thr
 355 360 365
 Ala Lys Val Thr Ser Ile Arg Ala Ala Thr Gly Gln Ser Ile Tyr Phe
 370 375 380

Tyr Asp Pro Ile Thr Asn Pro Gly Thr Ala Ala Ser Thr Asp Thr Leu
 385 390 395 400
 Asn Leu Asn Leu Ala Asp Ala Asn Ser Glu Ile Glu Tyr Gly Gly Ala
 405 410 415
 Ile Val Phe Ser Gly Glu Lys Leu Ser Pro Thr Glu Lys Ala Ile Ala
 420 425 430
 Ala Asn Val Thr Ser Thr Ile Arg Gln Pro Ala Val Leu Ala Arg Gly
 435 440 445
 Asp Leu Val Leu Arg Asp Gly Val Thr Val Thr Phe Lys Asp Leu Thr
 450 455 460
 Gln Ser Pro Gly Ser Arg Ile Leu Met Asp Gly Gly Thr Thr Leu Ser
 465 470 475 480
 Ala Lys Glu Ala Asn Leu Ser Leu Asn Gly Leu Ala Val Asn Leu Ser
 485 490 495
 Ser Leu Asp Gly Thr Asn Lys Ala Ala Leu Lys Thr Glu Ala Ala Asp
 500 505 510
 Lys Asn Ile Ser Leu Ser Gly Thr Ile Ala Leu Ile Asp Thr Glu Gly
 515 520 525
 Ser Phe Tyr Glu Asn His Asn Leu Lys Ser Ala Ser Thr Tyr Pro Leu
 530 535 540
 Leu Glu Leu Thr Thr Ala Gly Ala Asn Gly Thr Ile Thr Leu Gly Ala
 545 550 555 560
 Leu Ser Thr Leu Thr Leu Gln Glu Pro Glu Thr His Tyr Gly Tyr Gln
 565 570 575
 Gly Asn Trp Gln Leu Ser Trp Ala Asn Ala Thr Ser Ser Lys Ile Gly
 580 585 590
 Ser Ile Asn Trp Thr Arg Thr Gly Tyr Ile Pro Ser Pro Glu Arg Lys
 595 600 605
 Ser Asn Leu Pro Leu Asn Ser Leu Trp Gly Asn Phe Ile Asp Ile Arg
 610 615 620
 Ser Ile Asn Gln Leu Ile Glu Thr Lys Ser Ser Gly Glu Pro Phe Glu
 625 630 635 640
 Arg Glu Tyr Gly Phe Gln Glu Leu Arg Ile Ser Ser Ile Glu Ile Leu
 645 650 655
 Cys Pro Pro Ala Met Val Ser Ala Ile Ser Ala Gly Val Met His
 660 665 670

<210>469

<211>294

<212>PRT

<213>Chlamydia pneumoniae

<400>469

Val Trp Leu Ser Gly Ile Ala Asn Phe Phe Tyr Arg Asp Ser Met Pro
 1 5 10 15
 Thr Arg His Gly Phe Arg His Ile Ser Gly Gly Tyr Ala Leu Gly Ile
 20 25 30
 Thr Ala Thr Thr Pro Ala Glu Asp Gln Leu Thr Phe Ala Phe Cys Gln
 35 40 45
 Leu Phe Ala Arg Asp Arg Asn His Ile Thr Gly Lys Asn His Gly Asp
 50 55 60
 Thr Tyr Gly Ala Ser Leu Tyr Phe His His Thr Glu Gly Leu Phe Asp
 65 70 75 80
 Ile Ala Asn Phe Leu Trp Gly Lys Ala Thr Arg Ala Pro Trp Val Leu
 85 90 95
 Ser Glu Ile Ser Gln Ile Ile Pro Leu Ser Phe Asp Ala Lys Phe Ser
 100 105 110
 Tyr Leu His Thr Asp Asn His Met Lys Thr Tyr Tyr Thr Asp Asn Ser
 115 120 125
 Ile Ile Lys Gly Ser Trp Arg Asn Asp Ala Phe Cys Ala Asp Leu Gly
 130 135 140
 Ala Ser Leu Pro Phe Val Ile Ser Val Pro Tyr Leu Leu Lys Glu Val
 145 150 155 160
 Glu Pro Phe Val Lys Val Gln Tyr Ile Tyr Ala His Gln Gln Asp Phe
 165 170 175
 Tyr Glu Arg Tyr Ala Glu Gly Arg Ala Phe Asn Lys Ser Glu Leu Ile

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      180      185      190
Asn Val Glu Ile Pro Ile Gly Val Thr Phe Glu Arg Asp Ser Lys Ser
      195      200      205
Glu Lys Gly Thr Tyr Asp Leu Thr Leu Met Tyr Ile Leu Asp Ala Tyr
      210      215      220
Arg Arg Asn Pro Lys Cys Gln Thr Ser Leu Ile Ala Ser Asp Ala Asn
225      230      235      240
Trp Met Ala Tyr Gly Thr Asn Leu Ala Arg Gln Gly Phe Ser Val Arg
      245      250      255
Ala Ala Asn His Phe Gln Val Asn Pro His Met Glu Ile Phe Gly Gln
      260      265      270
Phe Ala Phe Glu Val Arg Ser Ser Ser Arg Asn Tyr Asn Thr Asn Leu
      275      280      285
Gly Ser Lys Phe Cys Phe
      290
<210>470
<211>930
<212>PRT
<213>Chlamydia pneumoniae
<400>470
Met Lys Ile Pro Leu His Lys Leu Leu Ile Ser Ser Thr Leu Val Thr
  1      5      10      15
Pro Ile Leu Leu Ser Ile Ala Thr Tyr Gly Ala Asp Ala Ser Leu Ser
      20      25      30
Pro Thr Asp Ser Phe Asp Gly Ala Gly Gly Ser Thr Phe Thr Pro Lys
      35      40      45
Ser Thr Ala Asp Ala Asn Gly Thr Asn Tyr Val Leu Ser Gly Asn Val
      50      55      60
Tyr Ile Asn Asp Ala Gly Lys Gly Thr Ala Leu Thr Gly Cys Cys Phe
      65      70      75      80
Thr Glu Thr Thr Gly Asp Leu Thr Phe Thr Gly Lys Gly Tyr Ser Phe
      85      90      95
Ser Phe Asn Thr Val Asp Ala Gly Ser Asn Ala Gly Ala Ala Ser
      100      105      110
Thr Thr Ala Asp Lys Ala Leu Thr Phe Thr Gly Phe Ser Asn Leu Ser
      115      120      125
Phe Ile Ala Ala Pro Gly Thr Thr Val Ala Ser Gly Lys Ser Thr Leu
      130      135      140
Ser Ser Ala Gly Ala Leu Asn Leu Thr Asp Asn Gly Thr Ile Leu Phe
      145      150      155      160
Ser Gln Asn Val Ser Asn Glu Ala Asn Asn Asn Gly Gly Ala Ile Thr
      165      170      175
Ala Lys Thr Leu Ser Ile Ser Gly Asn Thr Ser Ser Ile Thr Phe Thr
      180      185      190
Ser Asn Ser Ala Lys Lys Leu Gly Gly Ala Ile Tyr Ser Ser Ala Ala
      195      200      205
Ala Ser Ile Ser Gly Asn Thr Gly Gln Leu Val Phe Met Asn Asn Lys
      210      215      220
Gly Glu Thr Gly Gly Gly Ala Leu Gly Phe Glu Ala Ser Ser Ser Ile
225      230      235      240
Thr Gln Asn Ser Ser Leu Phe Phe Ser Gly Asn Thr Ala Thr Asp Ala
      245      250      255
Ala Gly Lys Gly Gly Ala Ile Tyr Cys Glu Lys Thr Gly Glu Thr Pro
      260      265      270
Thr Leu Thr Ile Ser Gly Asn Lys Ser Leu Thr Phe Ala Glu Asn Ser
      275      280      285
Ser Val Thr Gln Gly Gly Ala Ile Cys Ala His Gly Leu Asp Leu Ser
      290      295      300
Ala Ala Gly Pro Thr Leu Phe Ser Asn Asn Arg Cys Gly Asn Thr Ala
305      310      315      320
Ala Gly Lys Gly Gly Ala Ile Ala Ile Ala Asp Ser Gly Ser Leu Ser
      325      330      335
Leu Ser Ala Asn Gln Gly Asp Ile Thr Phe Leu Gly Asn Thr Leu Thr
      340      345      350

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Ser Thr Ser Ala Pro Thr Ser Thr Arg Asn Ala Ile Tyr Leu Gly Ser
 355 360 365
 Ser Ala Lys Ile Thr Asn Leu Arg Ala Ala Gln Gly Gln Ser Ile Tyr
 370 375 380
 Phe Tyr Asp Pro Ile Ala Ser Asn Thr Thr Gly Ala Ser Asp Val Leu
 385 390 395 400
 Thr Ile Asn Gln Pro Asp Ser Asn Ser Pro Leu Asp Tyr Ser Gly Thr
 405 410 415
 Ile Val Phe Ser Gly Glu Lys Leu Ser Ala Asp Glu Ala Lys Ala Ala
 420 425 430
 Asp Asn Phe Thr Ser Ile Leu Lys Gln Pro Leu Ala Leu Ala Ser Gly
 435 440 445
 Thr Leu Ala Leu Lys Gly Asn Val Glu Leu Asp Val Asn Gly Phe Thr
 450 455 460
 Gln Thr Glu Gly Ser Thr Leu Leu Met Gln Pro Gly Thr Lys Leu Lys
 465 470 475 480
 Ala Asp Thr Glu Ala Ile Ser Leu Thr Lys Leu Val Val Asp Leu Ser
 485 490 495
 Ala Leu Glu Gly Asn Lys Ser Val Ser Ile Glu Thr Ala Gly Ala Asn
 500 505 510
 Lys Thr Ile Thr Leu Thr Ser Pro Leu Val Phe Gln Asp Ser Ser Gly
 515 520 525
 Asn Phe Tyr Glu Ser His Thr Ile Asn Gln Ala Phe Thr Gln Pro Leu
 530 535 540
 Val Val Phe Thr Ala Ala Thr Ala Ala Ser Asp Ile Tyr Ile Asp Ala
 545 550 555 560
 Leu Leu Thr Ser Pro Val Gln Thr Pro Glu Pro His Tyr Gly Tyr Gln
 565 570 575
 Gly His Trp Glu Ala Thr Trp Ala Asp Thr Ser Thr Ala Lys Ser Gly
 580 585 590
 Thr Met Thr Trp Val Thr Thr Gly Tyr Asn Pro Asn Pro Glu Arg Arg
 595 600 605
 Ala Ser Val Val Pro Asp Ser Leu Trp Ala Ser Phe Thr Asp Ile Arg
 610 615 620
 Thr Leu Gln Gln Ile Met Thr Ser Gln Ala Asn Ser Ile Tyr Gln Gln
 625 630 635 640
 Arg Gly Leu Trp Ala Ser Gly Thr Ala Asn Phe Phe His Lys Asp Lys
 645 650 655
 Ser Gly Thr Asn Gln Ala Phe Arg His Lys Ser Tyr Gly Tyr Ile Val
 660 665 670
 Gly Gly Ser Ala Glu Asp Phe Ser Glu Asn Ile Phe Ser Val Ala Phe
 675 680 685
 Cys Gln Leu Phe Gly Lys Asp Lys Asp Leu Phe Ile Val Glu Asn Thr
 690 695 700
 Ser His Asn Tyr Leu Ala Ser Leu Tyr Leu Gln His Arg Ala Phe Leu
 705 710 715 720
 Gly Gly Leu Pro Met Pro Ser Phe Gly Ser Ile Thr Asp Met Leu Lys
 725 730 735
 Asp Ile Pro Leu Ile Leu Asn Ala Gln Leu Ser Tyr Ser Tyr Thr Lys
 740 745 750
 Asn Asp Met Asp Thr Arg Tyr Thr Ser Tyr Pro Glu Ala Gln Gly Ser
 755 760 765
 Trp Thr Asn Asn Ser Gly Ala Leu Glu Leu Gly Gly Ser Leu Ala Leu
 770 775 780
 Tyr Leu Pro Lys Glu Ala Pro Phe Phe Gln Gly Tyr Phe Pro Phe Leu
 785 790 795 800
 Lys Phe Gln Ala Val Tyr Ser Arg Gln Gln Asn Phe Lys Glu Ser Gly
 805 810 815
 Ala Glu Ala Arg Ala Phe Asp Asp Gly Asp Leu Val Asn Cys Ser Ile
 820 825 830
 Pro Val Gly Ile Arg Leu Glu Lys Ile Ser Glu Asp Glu Lys Asn Asn
 835 840 845
 Phe Glu Ile Ser Leu Ala Tyr Ile Gly Asp Val Tyr Arg Lys Asn Pro
 850 855 860

Arg Ser Arg Thr Ser Leu Met Val Ser Gly Ala Ser Trp Thr Ser Leu
 865 870 875 880
 Cys Lys Asn Leu Ala Arg Gln Ala Phe Leu Ala Ser Ala Gly Ser His
 885 890 895
 Leu Thr Leu Ser Pro His Val Glu Leu Ser Gly Glu Ala Ala Tyr Glu
 900 905 910
 Leu Arg Gly Ser Ala His Ile Tyr Asn Val Asp Cys Gly Leu Arg Tyr
 915 920 925

Ser Phe

930

<210>471

<211>138

<212>PRT

<213>Chlamydia pneumoniae

<400>471

Ile Ala Pro Pro Asn Phe Phe Ala Leu Leu Val Lys Val Ile Glu
 1 5 10 15
 Glu Val Phe Pro Glu Ile Glu Arg Val Phe Ala Val Ile Ala Pro Pro
 20 25 30
 Leu Leu Leu Ala Ser Leu Glu Thr Phe Trp Leu Lys Arg Ile Val Pro
 35 40 45
 Leu Ser Val Arg Phe Lys Ala Pro Ala Glu Leu Lys Val Leu Phe Pro
 50 55 60
 Glu Ala Thr Val Val Pro Gly Ala Ala Met Lys Glu Arg Leu Glu Asn
 65 70 75 80
 Pro Val Asn Val Arg Ala Leu Ser Ala Val Val Leu Ala Ala Ala Pro
 85 90 95
 Ala Phe Glu Pro Ala Ser Thr Val Leu Asn Glu Asn Glu Tyr Pro Phe
 100 105 110
 Pro Val Asn Val Arg Ser Pro Val Val Ser Val Lys Gln Gln Pro Val
 115 120 125
 Asn Ala Val Pro Phe Pro Ala Ser Phe Ile
 130 135

<210>472

<211>927

<212>PRT

<213>Chlamydia pneumoniae

<400>472

Met Lys Ser Ser Leu His Trp Phe Leu Ile Ser Ser Ser Leu Ala Leu
 1 5 10 15
 Pro Leu Ser Leu Asn Phe Ser Ala Phe Ala Ala Val Val Glu Ile Asn
 20 25 30
 Leu Gly Pro Thr Asn Ser Phe Ser Gly Pro Gly Thr Tyr Thr Pro Pro
 35 40 45
 Ala Gln Thr Thr Asn Ala Asp Gly Thr Ile Tyr Asn Leu Thr Gly Asp
 50 55 60
 Val Ser Ile Thr Asn Ala Gly Ser Pro Thr Ala Leu Thr Ala Ser Cys
 65 70 75 80
 Phe Lys Glu Thr Thr Gly Asn Leu Ser Phe Gln Gly His Gly Tyr Gln
 85 90 95
 Phe Leu Leu Gln Asn Ile Asp Ala Gly Ala Asn Cys Thr Phe Thr Asn
 100 105 110
 Thr Ala Ala Asn Lys Leu Leu Ser Phe Ser Gly Phe Ser Tyr Leu Ser
 115 120 125
 Leu Ile Gln Thr Thr Asn Ala Thr Thr Gly Thr Gly Ala Ile Lys Ser
 130 135 140
 Thr Gly Ala Cys Ser Ile Gln Ser Asn Tyr Ser Cys Tyr Phe Gly Gln
 145 150 155 160
 Asn Phe Ser Asn Asp Asn Gly Gly Ala Leu Gln Gly Ser Ser Ile Ser
 165 170 175
 Leu Ser Leu Asn Pro Asn Leu Thr Phe Ala Lys Asn Lys Ala Thr Gln
 180 185 190
 Lys Gly Gly Ala Leu Tyr Ser Thr Gly Gly Ile Thr Ile Asn Asn Thr
 195 200 205

Leu Asn Ser Ala Ser Phe Ser Glu Asn Thr Ala Ala Asn Asn Gly Gly
 210 215 220
 Ala Ile Tyr Thr Glu Ala Ser Ser Phe Ile Ser Ser Asn Lys Ala Ile
 225 230 235 240
 Ser Phe Ile Asn Asn Ser Val Thr Ala Thr Ser Ala Thr Gly Gly Ala
 245 250 255
 Ile Tyr Cys Ser Ser Thr Ser Ala Pro Lys Pro Val Leu Thr Leu Ser
 260 265 270
 Asp Asn Gly Glu Leu Asn Phe Ile Gly Asn Thr Ala Ile Thr Ser Gly
 275 280 285
 Gly Ala Ile Tyr Thr Asp Asn Leu Val Leu Ser Ser Gly Gly Pro Thr
 290 295 300
 Leu Phe Lys Asn Asn Ser Ala Ile Asp Thr Ala Ala Pro Leu Gly Gly
 305 310 315 320
 Ala Ile Ala Ile Ala Asp Ser Gly Ser Leu Ser Leu Ser Ala Leu Gly
 325 330 335
 Gly Asp Ile Thr Phe Glu Gly Asn Thr Val Val Lys Gly Ala Ser Ser
 340 345 350
 Ser Gln Thr Thr Thr Arg Asn Ser Ile Asn Ile Gly Asn Thr Asn Ala
 355 360 365
 Lys Ile Val Gln Leu Arg Ala Ser Gln Gly Asn Thr Ile Tyr Phe Tyr
 370 375 380
 Asp Pro Ile Thr Thr Ser Ile Thr Ala Ala Leu Ser Asp Ala Leu Asn
 385 390 395 400
 Leu Asn Gly Pro Asp Leu Ala Gly Asn Pro Ala Tyr Gln Gly Thr Ile
 405 410 415
 Val Phe Ser Gly Glu Lys Leu Ser Glu Ala Glu Ala Ala Glu Ala Asp
 420 425 430
 Asn Leu Lys Ser Thr Ile Gln Gln Pro Leu Thr Leu Ala Gly Gly Gln
 435 440 445
 Leu Ser Leu Lys Ser Gly Val Thr Leu Val Ala Lys Ser Phe Ser Gln
 450 455 460
 Ser Pro Gly Ser Thr Leu Leu Met Asp Ala Gly Thr Thr Leu Glu Thr
 465 470 475 480
 Ala Asp Gly Ser Leu Ser Ile Ile Cys Ser Gln Cys Arg Phe Leu Lys
 485 490 495
 Arg Asp Gln Glu Xaa Thr Leu Lys Ala Thr Gln Ala Ser Gln Thr Val
 500 505 510
 Thr Leu Ser Gly Ser Leu Ser Leu Val Asp Pro Ser Gly Asn Val Tyr
 515 520 525
 Glu Asp Val Ser Trp Asn Asn Pro Gln Val Phe Ser Cys Leu Thr Leu
 530 535 540
 Thr Ala Asp Asp Pro Ala Asn Ile His Ile Thr Asp Leu Ala Ala Asp
 545 550 555 560
 Pro Leu Glu Lys Asn Pro Ile His Trp Gly Tyr Gln Gly Asn Trp Ala
 565 570 575
 Leu Ser Trp Gln Glu Asp Thr Ala Thr Lys Ser Lys Ala Ala Thr Leu
 580 585 590
 Thr Trp Thr Lys Thr Gly Tyr Asn Pro Asn Pro Glu Arg Arg Gly Thr
 595 600 605
 Leu Val Ala Asn Thr Leu Trp Gly Ser Phe Val Asp Val Arg Ser Ile
 610 615 620
 Gln Gln Leu Val Ala Thr Lys Val Arg Gln Ser Gln Glu Thr Arg Gly
 625 630 635 640
 Ile Trp Cys Glu Gly Ile Ser Asn Phe Phe His Lys Asp Ser Thr Lys
 645 650 655
 Ile Asn Lys Gly Phe Arg His Ile Ser Ala Gly Tyr Val Val Gly Ala
 660 665 670
 Thr Thr Thr Leu Ala Ser Asp Asn Leu Ile Thr Ala Ala Phe Cys Gln
 675 680 685
 Leu Phe Gly Lys Asp Arg Asp His Phe Ile Asn Lys Asn Arg Ala Ser
 690 695 700
 Ala Tyr Ala Ala Ser Leu His Leu Gln His Leu Ala Thr Leu Ser Ser
 705 710 715 720

Pro Ser Leu Leu Arg Tyr Leu Pro Gly Ser Glu Ser Glu Gln Pro Val
 725 730 735
 Leu Phe Asp Ala Gln Ile Ser Tyr Ile Tyr Ser Lys Asn Thr Met Lys
 740 745 750
 Thr Tyr Tyr Thr Gln Ala Pro Lys Gly Glu Ser Ser Trp Tyr Asn Asp
 755 760 765
 Gly Cys Ala Leu Glu Leu Ala Ser Ser Leu Pro His Thr Ala Leu Ser
 770 775 780
 His Glu Gly Leu Phe His Ala Tyr Phe Pro Phe Ile Lys Val Glu Ala
 785 790 795 800
 Ser Tyr Ile His Gln Asp Ser Phe Lys Glu Arg Asn Thr Thr Leu Val
 805 810 815
 Arg Ser Phe Asp Ser Gly Asp Leu Ile Asn Val Ser Val Pro Ile Gly
 820 825 830
 Ile Thr Phe Glu Arg Phe Ser Arg Asn Glu Arg Ala Ser Tyr Glu Ala
 835 840 845
 Thr Val Ile Tyr Val Ala Asp Val Tyr Arg Lys Asn Pro Asp Cys Thr
 850 855 860
 Thr Ala Leu Leu Ile Asn Asn Thr Ser Trp Lys Thr Thr Gly Thr Asn
 865 870 875 880
 Leu Ser Arg Gln Ala Gly Ile Gly Arg Ala Gly Ile Phe Tyr Ala Phe
 885 890 895
 Ser Pro Asn Leu Glu Val Thr Ser Asn Leu Ser Met Glu Ile Arg Gly
 900 905 910
 Ser Ser Arg Ser Tyr Asn Ala Asp Leu Gly Gly Lys Phe Gln Phe
 915 920 925

<210>473

<211>393

<212>PRT

<213>Chlamydia pneumoniae

<400>473

Phe Ile Gln Pro Ser Arg Arg Glu Ile His Glu Trp Lys Cys Ile Leu
 1 5 10 15
 Leu Gly Ser Ser Leu Arg Met Glu Met Met Ser Pro Phe Gln Gln Pro
 20 25 30
 Glu Gln Cys His Phe Asp Val Val Gly Ser Phe Leu Arg Pro Glu Ser
 35 40 45
 Leu Thr Arg Ala Arg Ser Asp Phe Glu Glu Gly Arg Ile Val Tyr Glu
 50 55 60
 Gln Met Arg Val Val Glu Asp Ala Ala Ile Arg Asn Leu Ile Lys Lys
 65 70 75 80
 Gln Thr Glu Ala Gly Leu Ile Phe Phe Thr Asp Gly Glu Phe Arg Arg
 85 90 95
 Tyr Ser Trp Asp Phe Asp Phe Met Trp Gly Phe His Gly Val Asp Arg
 100 105 110
 Arg Arg Asp Ser Asn Asp Pro Glu Ile Gly Val Tyr Leu Lys Asp Lys
 115 120 125
 Ile Ser Val Ser Lys His Pro Phe Ile Glu His Phe Glu Phe Val Lys
 130 135 140
 Thr Phe Glu Lys Gly Asn Ala Lys Ala Lys Gln Thr Ile Pro Ser Pro
 145 150 155 160
 Ser Gln Phe Phe His Glu Met Ile Phe Ala Pro Asn Leu Lys Asn Thr
 165 170 175
 Arg Lys Phe Tyr Pro Thr Asn Gln Glu Leu Ile Asp Asp Ile Val Phe
 180 185 190
 Tyr Tyr Arg Gln Val Ile Gln Asp Leu Tyr Ala Ala Gly Cys Arg Asn
 195 200 205
 Leu Gln Leu Asp Asp Cys Ala Trp Cys Arg Leu Leu Asp Ile Arg Ala
 210 215 220
 Pro Ser Trp Tyr Gly Val Asp Ser His Asp Arg Leu Gln Glu Ile Leu
 225 230 235 240
 Glu Gln Phe Leu Trp Ile His Asn Leu Val Met Lys Asp Arg Pro Glu
 245 250 255
 Asp Leu Phe Val Ser Leu His Val Cys Arg Gly Asp Tyr Gln Ala Glu

260 265 270
 Phe Phe Ser Arg Arg Ala Tyr Asp Ser Ile Glu Glu Pro Leu Phe Ala
 275 280 285
 Lys Thr Asp Val Asp Ser Tyr His Tyr Tyr Trp Ala Leu Asp Asp Lys
 290 295 300
 Tyr Ser Gly Gly Ala Glu Pro Leu Ala Tyr Val Ser Gly Glu Lys His
 305 310 315 320
 Val Cys Leu Gly Leu Ile Ser Ser Asn His Ser Cys Ile Glu Asp Arg
 325 330 335
 Asp Ala Val Val Ser Arg Ile Tyr Glu Ala Ala Ser Tyr Ile Pro Leu
 340 345 350
 Glu Arg Leu Ser Leu Ser Pro Gln Cys Gly Phe Ala Ser Cys Glu Gly
 355 360 365
 Asp His Arg Met Thr Glu Glu Gln Trp Lys Lys Ile Ala Phe Val
 370 375 380
 Lys Glu Ile Ala Lys Glu Ile Trp Gly
 385 390
 <210>474
 <211>643
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>474
 Leu Met Ala Glu Pro Phe Met Leu Arg Ser Leu His Trp Leu Pro Gly
 1 5 10 15
 Gly Gly Gly Gly Ile Ser Phe Ser Asn Asn Ile Val Gln Gly Thr Thr
 20 25 30
 Ala Gly Asn Gly Gly Ala Ile Ser Ile Leu Ala Ala Gly Glu Cys Ser
 35 40 45
 Leu Ser Ala Glu Ala Gly Asp Ile Thr Phe Asn Gly Asn Ala Ile Val
 50 55 60
 Ala Thr Thr Pro Gln Thr Thr Lys Arg Asn Ser Ile Asp Ile Gly Ser
 65 70 75 80
 Thr Ala Lys Ile Thr Asn Leu Arg Ala Ile Ser Gly His Ser Ile Phe
 85 90 95
 Phe Tyr Asp Pro Ile Thr Ala Asn Thr Ala Ala Asp Ser Thr Asp Thr
 100 105 110
 Leu Asn Leu Asn Lys Ala Asp Ala Gly Asn Ser Thr Asp Tyr Ser Gly
 115 120 125
 Ser Ile Val Phe Ser Gly Glu Lys Leu Ser Glu Asp Glu Ala Lys Val
 130 135 140
 Ala Asp Asn Leu Thr Ser Thr Leu Lys Gln Pro Val Thr Leu Thr Ala
 145 150 155 160
 Gly Asn Leu Val Leu Lys Arg Gly Val Thr Leu Asp Thr Lys Gly Phe
 165 170 175
 Thr Gln Thr Ala Gly Ser Ser Val Ile Met Asp Ala Gly Thr Thr Leu
 180 185 190
 Lys Ala Ser Thr Glu Glu Val Thr Leu Thr Gly Leu Ser Ile Pro Val
 195 200 205
 Asp Ser Leu Gly Glu Gly Lys Lys Val Val Ile Ala Ala Ser Ala Ala
 210 215 220
 Ser Lys Asn Val Ala Leu Ser Gly Pro Ile Leu Leu Leu Asp Asn Gln
 225 230 235 240
 Gly Asn Ala Tyr Glu Asn His Asp Leu Gly Lys Thr Gln Asp Phe Ser
 245 250 255
 Phe Val Gln Leu Ser Ala Leu Gly Thr Ala Thr Thr Thr Asp Val Pro
 260 265 270
 Ala Val Pro Thr Val Ala Thr Pro Thr His Tyr Gly Tyr Gln Gly Thr
 275 280 285
 Trp Gly Met Thr Trp Val Asp Asp Thr Ala Ser Thr Pro Lys Thr Lys
 290 295 300
 Thr Ala Thr Leu Ala Trp Thr Asn Thr Gly Tyr Leu Pro Asn Pro Glu
 305 310 315 320
 Arg Gln Gly Pro Leu Val Pro Asn Ser Leu Trp Gly Ser Phe Ser Asp
 325 330 335

Ile Gln Ala Ile Gln Gly Val Ile Glu Arg Ser Ala Leu Thr Leu Cys
 340 345 350
 Ser Asp Arg Gly Phe Trp Ala Ala Gly Val Ala Asn Phe Leu Asp Lys
 355 360 365
 Asp Lys Lys Gly Glu Lys Arg Lys Tyr Arg His Lys Ser Gly Gly Tyr
 370 375 380
 Ala Ile Gly Gly Ala Ala Gln Thr Cys Ser Glu Asn Leu Ile Ser Phe
 385 390 395 400
 Ala Phe Cys Gln Leu Phe Gly Ser Asp Lys Asp Phe Leu Val Ala Lys
 405 410 415
 Asn His Thr Asp Thr Tyr Ala Gly Ala Phe Tyr Ile Gln His Ile Thr
 420 425 430
 Glu Cys Ser Gly Phe Ile Gly Cys Leu Leu Asp Lys Leu Pro Gly Ser
 435 440 445
 Trp Ser His Lys Pro Leu Val Leu Glu Gly Gln Leu Ala Tyr Ser His
 450 455 460
 Val Ser Asn Asp Leu Lys Thr Lys Tyr Thr Ala Tyr Pro Glu Val Lys
 465 470 475 480
 Gly Ser Trp Gly Asn Asn Ala Phe Asn Met Met Leu Gly Ala Ser Ser
 485 490 495
 His Ser Tyr Pro Glu Tyr Leu His Cys Phe Asp Thr Tyr Ala Pro Tyr
 500 505 510
 Ile Lys Leu Asn Leu Thr Tyr Ile Arg Gln Asp Ser Phe Ser Glu Lys
 515 520 525
 Gly Thr Glu Gly Arg Ser Phe Asp Asp Ser Asn Leu Phe Asn Leu Ser
 530 535 540
 Leu Pro Ile Gly Val Lys Phe Glu Lys Phe Ser Asp Cys Asn Asp Phe
 545 550 555 560
 Ser Tyr Asp Leu Thr Leu Ser Tyr Val Pro Asp Leu Ile Arg Asn Asp
 565 570 575
 Pro Lys Cys Thr Thr Ala Leu Val Ile Ser Gly Ala Ser Trp Glu Thr
 580 585 590
 Tyr Ala Asn Asn Leu Ala Arg Gln Ala Leu Gln Val Arg Ala Gly Ser
 595 600 605
 His Tyr Ala Phe Ser Pro Met Phe Glu Val Leu Gly Gln Phe Val Phe
 610 615 620
 Glu Val Arg Gly Ser Ser Arg Ile Tyr Asn Val Asp Leu Gly Gly Lys
 625 630 635 640
 Phe Gln Phe

<210>475

<211>102

<212>PRT

<213>Chlamydia pneumoniae

<400>475

Lys Lys Met Leu Cys Pro Asp Ile Ala Arg Lys Phe Val Ile Phe Ala
 1 5 10 15
 Val Asp Pro Met Ser Ile Glu Phe Leu Phe Val Val Cys Gly Val Val
 20 25 30
 Ala Thr Met Ala Phe Pro Leu Lys Val Met Ser Pro Ala Ser Ala Glu
 35 40 45
 Arg Leu His Ser Pro Ala Ala Ser Ile Glu Met Ala Pro Pro Leu Pro
 50 55 60
 Ala Val Val Pro Trp Thr Ile Leu Leu Glu Lys Glu Ile Pro Pro Pro
 65 70 75 80
 Pro Pro Gly Ser Gln Cys Lys Leu Leu Ser Ile Asn Gly Ser Ala Ile
 85 90 95
 Ser Tyr Ser Leu Val Ser
 100

<210>476

<211>174

<212>PRT

<213>Chlamydia pneumoniae

<400>476

Ser Gln Pro Pro Gln Glu Lys Val Gln Leu Asn Val Glu Gly Ile Leu
 1 5 10 15
 His Leu Ile Thr Met Glu Leu Phe Tyr Leu Asn Lys Ile Thr Val Arg
 20 25 30
 Lys Met Ala Asp Ile Ser Thr Lys Asn Leu Ser Leu Lys Asn Ser Thr
 35 40 45
 Gly Ser Ile Ser Phe Glu Gly Asn Lys Ser Ser Ala Thr Gly Lys Lys
 50 55 60
 Gly Gly Ala Ile Cys Ala Thr Gly Thr Val Asp Ile Thr Asn Asn Thr
 65 70 75 80
 Ala Pro Thr Leu Phe Ser Asn Asn Ile Ala Glu Ala Ala Gly Gly Ala
 85 90 95
 Ile Asn Ser Thr Gly Asn Cys Thr Ile Thr Gly Asn Thr Ser Leu Val
 100 105 110
 Phe Ser Glu Asn Ser Val Thr Ala Thr Ala Gly Asn Gly Gly Ala Leu
 115 120 125
 Ser Gly Asp Ala Asp Val Thr Ile Ser Gly Asn Gln Ser Val Thr Phe
 130 135 140
 Ser Gly Asn Gln Ala Val Ala Asn Gly Gly Ala Ile Tyr Ala Lys Lys
 145 150 155 160
 Leu Thr Leu Ala Ser Gly Gly Gly Gly Tyr Leu Leu Phe
 165 170

<210>477

<211>118

<212>PRT

<213>Chlamydia pneumoniae

<400>477

Met Lys Ser Gln Phe Ser Trp Leu Val Leu Ser Ser Thr Leu Ala Cys
 1 5 10 15
 Phe Thr Ser Cys Ser Thr Val Phe Ala Ala Thr Ala Glu Asn Ile Gly
 20 25 30
 Pro Ser Asp Ser Phe Asp Gly Ser Thr Asn Thr Gly Thr Tyr Thr Pro
 35 40 45
 Lys Asn Thr Thr Thr Gly Ile Asp Tyr Thr Leu Thr Gly Asp Ile Thr
 50 55 60
 Leu Gln Asn Leu Gly Asp Ser Ala Ala Leu Thr Lys Gly Cys Phe Ser
 65 70 75 80
 Asp Thr Thr Glu Ser Leu Ser Phe Ala Gly Lys Gly Tyr Ser Leu Ser
 85 90 95
 Phe Leu Asn Xaa Lys Ser Ser Ala Glu Gly Ala Xaa Phe Leu Leu Gln
 100 105 110
 Leu Ile Lys Ile Cys Arg
 115

<210>478

<211>949

<212>PRT

<213>Chlamydia pneumoniae

<400>478

Leu Ile Tyr Leu Phe Cys Phe Tyr Ile Asp Ala Asn Ser Ser Leu Lys
 1 5 10 15
 Asn Lys Ser Ile Thr Met Lys Thr Ser Ile Pro Trp Val Leu Val Ser
 20 25 30
 Ser Val Leu Ala Phe Ser Cys His Leu Gln Ser Leu Ala Asn Glu Glu
 35 40 45
 Leu Leu Ser Pro Asp Asp Ser Phe Asn Gly Asn Ile Asp Ser Gly Thr
 50 55 60
 Phe Thr Pro Lys Thr Ser Ala Thr Thr Tyr Ser Leu Thr Gly Asp Val
 65 70 75 80
 Phe Phe Tyr Glu Pro Gly Lys Gly Thr Pro Leu Ser Asp Ser Cys Phe
 85 90 95
 Lys Gln Thr Thr Asp Asn Leu Thr Phe Leu Gly Asn Gly His Ser Leu
 100 105 110
 Thr Phe Gly Phe Ile Asp Ala Gly Thr His Ala Gly Ala Ala Ser
 115 120 125

Thr Thr Ala Asn Lys Asn Leu Thr Phe Ser Gly Phe Ser Leu Leu Ser
 130 135 140
 Phe Asp Ser Ser Pro Ser Thr Thr Val Thr Thr Gly Gln Gly Thr Leu
 145 150 155 160
 Ser Ser Ala Gly Gly Val Asn Leu Glu Asn Ile Arg Lys Leu Val Val
 165 170 175
 Ala Gly Asn Phe Ser Thr Ala Asp Gly Gly Ala Ile Lys Gly Ala Ser
 180 185 190
 Phe Leu Leu Thr Gly Thr Ser Gly Asp Ala Leu Phe Ser Asn Asn Ser
 195 200 205
 Ser Ser Thr Lys Gly Gly Ala Ile Ala Thr Thr Ala Gly Ala Arg Ile
 210 215 220
 Ala Asn Asn Thr Gly Xaa Val Arg Phe Leu Ser Asn Ile Ala Ser Thr
 225 230 235 240
 Ser Gly Gly Ala Ile Asp Asp Glu Gly Thr Ser Ile Leu Ser Asn Asn
 245 250 255
 Lys Phe Leu Tyr Phe Glu Gly Asn Ala Ala Lys Thr Thr Gly Gly Ala
 260 265 270
 Ile Cys Asn Thr Lys Ala Ser Gly Ser Pro Glu Leu Ile Ile Ser Asn
 275 280 285
 Asn Lys Thr Leu Ile Phe Ala Ser Asn Val Ala Glu Thr Ser Gly Gly
 290 295 300
 Ala Ile His Ala Lys Lys Leu Ala Leu Ser Ser Gly Gly Phe Thr Glu
 305 310 315 320
 Phe Leu Arg Asn Asn Val Ser Ser Ala Thr Pro Lys Gly Gly Ala Ile
 325 330 335
 Ser Ile Asp Ala Ser Gly Glu Leu Ser Leu Ser Ala Glu Thr Gly Asn
 340 345 350
 Ile Thr Phe Val Arg Asn Thr Leu Thr Thr Thr Gly Ser Thr Asp Thr
 355 360 365
 Pro Lys Arg Asn Ala Ile Asn Ile Gly Ser Asn Gly Lys Phe Thr Glu
 370 375 380
 Leu Arg Ala Ala Lys Asn His Thr Ile Phe Phe Tyr Asp Pro Ile Thr
 385 390 395 400
 Ser Glu Gly Thr Ser Ser Asp Val Leu Lys Ile Asn Asn Gly Ser Ala
 405 410 415
 Gly Ala Leu Asn Pro Tyr Gln Gly Thr Ile Leu Phe Ser Gly Glu Thr
 420 425 430
 Leu Thr Ala Asp Glu Leu Lys Val Ala Asp Asn Leu Lys Ser Ser Phe
 435 440 445
 Thr Gln Pro Val Ser Leu Ser Gly Gly Lys Leu Leu Leu Gln Lys Gly
 450 455 460
 Val Thr Leu Glu Ser Thr Ser Phe Ser Gln Glu Ala Gly Ser Leu Leu
 465 470 475 480
 Gly Met Asp Ser Gly Thr Thr Leu Ser Thr Thr Ala Gly Ser Ile Thr
 485 490 495
 Ile Thr Asn Leu Gly Ile Asn Val Asp Ser Leu Gly Leu Lys Gln Pro
 500 505 510
 Val Ser Leu Thr Ala Lys Gly Ala Ser Asn Lys Val Ile Val Ser Gly
 515 520 525
 Lys Leu Asn Leu Ile Asp Ile Glu Gly Asn Ile Tyr Glu Ser His Met
 530 535 540
 Phe Ser His Asp Gln Leu Phe Ser Leu Leu Lys Ile Thr Val Asp Ala
 545 550 555 560
 Asp Val Asp Thr Asn Val Asp Ile Ser Ser Leu Ile Pro Val Pro Ala
 565 570 575
 Glu Asp Pro Asn Ser Glu Tyr Gly Phe Gln Gly Gln Trp Asn Val Asn
 580 585 590
 Trp Thr Thr Asp Thr Ala Thr Asn Thr Lys Glu Ala Thr Ala Thr Trp
 595 600 605
 Thr Lys Thr Gly Phe Val Pro Ser Pro Glu Arg Lys Ser Ala Leu Val
 610 615 620
 Cys Asn Thr Leu Trp Gly Val Phe Thr Asp Ile Arg Ser Leu Gln Gln
 625 630 635 640

Leu Val Glu Ile Gly Ala Thr Gly Met Glu His Lys Gln Gly Phe Trp
 645 650 655
 Val Ser Ser Met Thr Asn Phe Leu His Lys Thr Gly Asp Glu Asn Arg
 660 665 670
 Lys Gly Phe Arg His Thr Ser Gly Gly Tyr Val Ile Gly Gly Ser Ala
 675 680 685
 His Thr Pro Lys Asp Asp Leu Phe Thr Phe Ala Phe Cys His Leu Phe
 690 695 700
 Ala Arg Asp Lys Asp Cys Phe Ile Ala His Asn Asn Ser Arg Thr Tyr
 705 710 715 720
 Gly Gly Thr Leu Phe Phe Lys His Ser His Thr Leu Gln Pro Gln Asn
 725 730 735
 Tyr Leu Arg Leu Gly Arg Ala Lys Phe Ser Glu Ser Ala Ile Glu Lys
 740 745 750
 Phe Pro Arg Glu Ile Pro Leu Ala Leu Asp Val Gln Val Ser Phe Ser
 755 760 765
 His Ser Asp Asn Arg Met Glu Thr His Tyr Thr Ser Leu Pro Glu Ser
 770 775 780
 Glu Gly Ser Trp Ser Asn Glu Cys Ile Ala Gly Gly Ile Gly Leu Asp
 785 790 795 800
 Leu Pro Phe Val Leu Ser Asn Pro His Pro Leu Phe Lys Thr Phe Ile
 805 810 815
 Pro Gln Met Lys Val Glu Met Val Tyr Val Ser Gln Asn Ser Phe Phe
 820 825 830
 Glu Ser Ser Ser Asp Gly Arg Gly Phe Ser Ile Gly Arg Leu Leu Asn
 835 840 845
 Leu Ser Ile Pro Val Gly Ala Lys Phe Val Gln Gly Asp Ile Gly Asp
 850 855 860
 Ser Tyr Thr Tyr Asp Leu Ser Gly Phe Phe Val Ser Asp Val Tyr Arg
 865 870 875 880
 Asn Asn Pro Gln Ser Thr Ala Thr Leu Val Met Ser Pro Asp Ser Trp
 885 890 895
 Lys Ile Arg Gly Gly Asn Leu Ser Arg Gln Ala Phe Leu Leu Arg Gly
 900 905 910
 Ser Asn Asn Tyr Val Tyr Asn Ser Asn Cys Glu Leu Phe Gly His Tyr
 915 920 925
 Ala Met Glu Leu Arg Gly Ser Ser Arg Asn Tyr Asn Val Asp Val Gly
 930 935 940
 Thr Lys Leu Arg Phe

945
 <210>479
 <211>519
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>479

Phe Asn Glu Glu Thr Met Thr Ile Leu Arg Asn Phe Leu Thr Cys Ser
 1 5 10 15
 Ala Leu Phe Leu Ala Leu Pro Ala Ala Gln Val Val Tyr Leu His
 20 25 30
 Glu Ser Asp Gly Tyr Asn Gly Ala Ile Asn Asn Lys Ser Leu Glu Pro
 35 40 45
 Lys Ile Thr Cys Tyr Pro Glu Gly Thr Ser Tyr Ile Phe Leu Asp Asp
 50 55 60
 Val Arg Ile Ser Asn Val Lys His Asp Gln Glu Asp Ala Gly Val Phe
 65 70 75 80
 Ile Asn Arg Ser Gly Asn Leu Phe Phe Met Gly Asn Arg Cys Asn Phe
 85 90 95
 Thr Phe His Asn Leu Met Thr Glu Gly Phe Gly Ala Ala Ile Ser Asn
 100 105 110
 Arg Val Gly Asp Thr Thr Leu Thr Leu Ser Asn Phe Ser Tyr Leu Ala
 115 120 125
 Phe Thr Ser Ala Pro Leu Leu Pro Gln Gly Gln Gly Ala Ile Tyr Ser
 130 135 140
 Leu Gly Ser Val Met Ile Glu Asn Ser Glu Glu Val Thr Phe Cys Gly

145 150 155 160
 Asn Tyr Ser Ser Trp Ser Gly Ala Ala Ile Tyr Thr Pro Tyr Leu Leu
 165 170 175
 Gly Ser Lys Ala Ser Arg Pro Ser Val Asn Leu Ser Gly Asn Arg Tyr
 180 185 190
 Leu Val Phe Arg Asp Asn Val Ser Gln Gly Tyr Gly Gly Ala Ile Ser
 195 200 205
 Thr His Asn Leu Thr Leu Thr Thr Arg Gly Pro Ser Cys Phe Glu Asn
 210 215 220
 Asn His Ala Tyr His Asp Val Asn Ser Asn Gly Gly Ala Ile Ala Ile
 225 230 235 240
 Ala Pro Gly Gly Ser Ile Ser Ile Ser Val Lys Ser Gly Asp Leu Ile
 245 250 255
 Phe Lys Gly Asn Thr Ala Ser Gln Asp Gly Asn Thr Ile His Asn Ser
 260 265 270
 Ile His Leu Gln Ser Gly Ala Gln Phe Lys Asn Leu Arg Ala Val Ser
 275 280 285
 Glu Ser Gly Val Tyr Phe Tyr Asp Pro Ile Ser His Ser Glu Ser His
 290 295 300
 Lys Ile Thr Asp Leu Val Ile Asn Ala Pro Glu Gly Lys Glu Thr Tyr
 305 310 315 320
 Glu Gly Thr Ile Ser Phe Ser Gly Leu Cys Leu Asp Asp His Glu Val
 325 330 335
 Cys Ala Glu Asn Leu Thr Ser Thr Ile Leu Gln Asp Val Thr Leu Ala
 340 345 350
 Gly Gly Thr Leu Ser Leu Ser Asp Gly Val Thr Leu Gln Leu His Ser
 355 360 365
 Phe Lys Gln Glu Ala Ser Ser Thr Leu Thr Met Ser Pro Gly Thr Thr
 370 375 380
 Leu Leu Cys Ser Gly Asp Ala Arg Val Gln Asn Leu His Ile Leu Ile
 385 390 395 400
 Glu Asp Thr Asp Asn Phe Val Pro Val Arg Ile Arg Ala Glu Asp Lys
 405 410 415
 Asp Ala Leu Val Ser Leu Glu Lys Leu Lys Val Ala Phe Glu Ala Tyr
 420 425 430
 Trp Ser Val Tyr Asp Phe Pro Gln Phe Lys Glu Ala Phe Thr Ile Pro
 435 440 445
 Leu Leu Glu Leu Leu Gly Pro Ser Phe Asp Ser Leu Leu Gly Glu
 450 455 460
 Thr Thr Leu Glu Arg Thr Gln Val Thr Thr Glu Asn Asp Ala Val Arg
 465 470 475 480
 Gly Phe Trp Ser Leu Ser Trp Glu Glu Tyr Pro Pro Ser Leu Asp Lys
 485 490 495
 Asp Arg Arg Ile Thr Pro Thr Lys Lys Thr Val Phe Leu Thr Trp Asn
 500 505 510
 Pro Glu Ile Thr Ser Thr Pro
 515

<210>480

<211>522

<212>PRT

<213>Chlamydia pneumoniae

<400>480

Asn Cys Val Leu Leu Tyr Leu Phe Phe Tyr Ser Leu Ser Leu Ile Cys
 1 5 10 15
 Arg Ile Ile Trp Phe His Leu Tyr Val Gln Met Lys Thr Ser Ile Arg
 20 25 30
 Lys Phe Leu Ile Ser Thr Thr Leu Ala Pro Cys Phe Ala Ser Thr Ala
 35 40 45
 Phe Thr Val Glu Val Ile Met Pro Ser Glu Asn Phe Asp Gly Ser Ser
 50 55 60
 Gly Lys Ile Phe Pro Tyr Thr Thr Leu Ser Asp Pro Arg Gly Thr Leu
 65 70 75 80
 Cys Ile Phe Ser Gly Asp Leu Tyr Ile Ala Asn Leu Asp Asn Ala Ile
 85 90 95

Ser Arg Thr Ser Ser Ser Cys Phe Ser Asn Arg Ala Gly Ala Leu Gln
 100 105 110
 Ile Leu Gly Lys Gly Gly Val Phe Ser Phe Leu Asn Ile Arg Ser Ser
 115 120 125
 Ala Asp Gly Ala Ala Ile Ser Ser Val Ile Thr Gln Asn Pro Glu Leu
 130 135 140
 Cys Pro Leu Ser Phe Ser Gly Phe Ser Gln Met Ile Phe Asp Asn Cys
 145 150 155 160
 Glu Ser Leu Thr Ser Asp Thr Ser Ala Ser Asn Val Ile Pro His Ala
 165 170 175
 Ser Ala Ile Tyr Ala Thr Thr Pro Met Leu Phe Thr Asn Asn Asp Ser
 180 185 190
 Ile Leu Phe Gln Tyr Asn Arg Ser Ala Gly Phe Gly Ala Ala Ile Arg
 195 200 205
 Gly Thr Ser Ile Thr Ile Glu Asn Thr Lys Lys Ser Leu Leu Phe Asn
 210 215 220
 Gly Asn Gly Ser Ile Ser Asn Gly Gly Ala Leu Thr Gly Ser Ala Ala
 225 230 235 240
 Ile Asn Leu Ile Asn Asn Ser Ala Pro Val Ile Phe Ser Thr Asn Ala
 245 250 255
 Thr Gly Ile Tyr Gly Gly Ala Ile Tyr Leu Thr Gly Gly Ser Met Leu
 260 265 270
 Thr Ser Gly Asn Leu Ser Gly Val Leu Phe Val Asn Asn Ser Ser Arg
 275 280 285
 Ser Gly Gly Ala Ile Tyr Ala Asn Gly Asn Val Thr Phe Ser Asn Asn
 290 295 300
 Ser Asp Leu Thr Phe Gln Asn Asn Thr Ala Ser Pro Gln Asn Ser Leu
 305 310 315 320
 Pro Ala Pro Thr Pro Pro Pro Thr Pro Pro Ala Val Thr Pro Leu Leu
 325 330 335
 Gly Tyr Gly Gly Ala Ile Phe Cys Thr Pro Pro Ala Thr Pro Pro Pro
 340 345 350
 Thr Gly Val Ser Leu Thr Ile Ser Gly Glu Asn Ser Val Thr Phe Leu
 355 360 365
 Glu Asn Ile Ala Ser Glu Gln Gly Gly Ala Leu Tyr Gly Lys Lys Ile
 370 375 380
 Ser Ile Asp Ser Asn Lys Ser Thr Ile Phe Leu Gly Asn Thr Ala Gly
 385 390 395 400
 Lys Gly Gly Ala Ile Ala Ile Pro Glu Ser Gly Glu Leu Ser Leu Ser
 405 410 415
 Ala Asn Gln Gly Asp Ile Leu Phe Asn Lys Asn Leu Ser Ile Thr Ser
 420 425 430
 Gly Thr Pro Thr Arg Asn Ser Ile His Phe Gly Lys Asp Ala Lys Phe
 435 440 445
 Ala Thr Leu Gly Leu Arg Lys Ala Ile Pro Tyr Thr Ser Met Ile Arg
 450 455 460
 Leu His Leu Met Ile Tyr Leu Cys Ile Arg Ser Arg Tyr Cys Gly Arg
 465 470 475 480
 Gln Ser Gln Ser Gln Cys Arg Trp Cys Val Phe Arg Asp Tyr Cys Leu
 485 490 495
 Phe Arg Arg Asn Pro His Cys Tyr Arg Ser Ser Asn Pro Cys Lys Cys
 500 505 510
 Tyr Ile Tyr Ile Lys Pro Lys Ala Arg Thr
 515 520

<210>481

<211>85

<212>PRT

<213>Chlamydia pneumoniae

<400>481

Arg Ala Pro Pro Cys Ser Glu Ala Met Phe Ser Arg Asn Val Thr Leu
 1 5 10 15
 Phe Ser Pro Asp Ile Val Arg Leu Thr Pro Val Gly Gly Gly Val Ala
 20 25 30
 Gly Gly Val Gln Lys Met Ala Pro Pro Tyr Pro Asn Lys Gly Val Thr

35 40 45
 Ala Gly Gly Val Gly Gly Gly Val Gly Ala Gly Lys Glu Phe Cys Gly
 50 55 60
 Asp Ala Val Leu Phe Trp Lys Val Arg Ser Leu Leu Leu Glu Asn Val
 65 70 75 80
 Thr Phe Pro Leu Ala
 85
 <210>482
 <211>530
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>482
 Phe Ile Ser Ala Ser Ala Ala Ala Thr Val Val Val Asn Pro Lys Ala
 1 5 10 15
 Ser Ala Asp Gly Ala Tyr Ser Gly Thr Ile Val Phe Ser Gly Glu Thr
 20 25 30
 Leu Thr Ala Thr Glu Ala Ala Thr Pro Ala Asn Ala Thr Ser Thr Leu
 35 40 45
 Asn Gln Lys Leu Glu Leu Glu Gly Gly Thr Leu Ala Leu Arg Asn Gly
 50 55 60
 Ala Thr Leu Asn Val His Asn Phe Thr Gln Asp Glu Lys Ser Val Val
 65 70 75 80
 Ile Met Asp Ala Gly Thr Thr Leu Ala Thr Thr Asn Gly Ala Asn Asn
 85 90 95
 Thr Asp Gly Ala Ile Thr Leu Asn Lys Leu Val Ile Asn Leu Asp Ser
 100 105 110
 Leu Asp Gly Thr Lys Ala Ala Val Val Asn Val Gln Ser Thr Asn Gly
 115 120 125
 Ala Leu Thr Ile Ser Gly Thr Leu Gly Leu Val Lys Asn Ser Gln Asp
 130 135 140
 Cys Cys Asp Asn His Gly Met Phe Asn Lys Asp Leu Gln Gln Val Pro
 145 150 155 160
 Ile Leu Glu Leu Lys Ala Thr Ser Asn Thr Val Thr Thr Thr Asp Phe
 165 170 175
 Ser Leu Gly Thr Asn Gly Tyr Gln Gln Ser Pro Tyr Gly Tyr Gln Gly
 180 185 190
 Thr Trp Glu Phe Thr Ile Asp Thr Thr Thr His Thr Val Thr Gly Asn
 195 200 205
 Trp Lys Lys Thr Gly Tyr Leu Pro His Pro Glu Arg Leu Ala Pro Leu
 210 215 220
 Ile Pro Asn Ser Leu Trp Ala Asn Val Ile Asp Leu Arg Ala Val Ser
 225 230 235 240
 Gln Ala Ser Ala Ala Asp Gly Glu Asp Val Pro Gly Lys Gln Leu Ser
 245 250 255
 Ile Thr Gly Ile Thr Asn Phe Phe His Ala Asn His Thr Gly Asp Ala
 260 265 270
 Arg Ser Tyr Arg His Met Gly Gly Tyr Leu Ile Asn Thr Tyr Thr
 275 280 285
 Arg Ile Thr Pro Asp Ala Ala Leu Ser Leu Gly Phe Gly Gln Leu Phe
 290 295 300
 Thr Lys Ser Lys Asp Tyr Leu Val Gly His Gly His Ser Asn Val Tyr
 305 310 315 320
 Phe Ala Thr Val Tyr Ser Asn Ile Thr Lys Ser Leu Phe Gly Ser Ser
 325 330 335
 Arg Phe Phe Ser Gly Gly Thr Ser Arg Val Thr Tyr Ser Arg Ser Asn
 340 345 350
 Glu Lys Val Lys Thr Ser Tyr Thr Lys Leu Pro Lys Gly Arg Cys Ser
 355 360 365
 Trp Ser Asn Asn Cys Trp Leu Gly Glu Leu Glu Gly Asn Leu Pro Ile
 370 375 380
 Thr Leu Ser Ser Arg Ile Leu Asn Leu Lys Gln Ile Ile Pro Phe Val
 385 390 395 400
 Lys Ala Glu Val Ala Tyr Ala Thr His Gly Gly Ile Gln Glu Asn Thr
 405 410 415

Pro Glu Gly Arg Ile Phe Gly His Gly His Leu Leu Asn Val Ala Val
 420 425 430
 Pro Val Gly Val Arg Phe Gly Lys Asn Ser His Asn Arg Pro Asp Phe
 435 440 445
 Tyr Thr Ile Ile Val Ala Tyr Ala Pro Asp Val Tyr Arg His Asn Pro
 450 455 460
 Asp Cys Asp Thr Thr Leu Pro Ile Asn Gly Ala Thr Trp Thr Ser Ile
 465 470 475 480
 Gly Asn Asn Leu Thr Arg Ser Thr Leu Leu Val Gln Ala Ser Ser His
 485 490 495
 Thr Ser Val Asn Asp Val Leu Glu Ile Phe Gly His Cys Gly Cys Asp
 500 505 510
 Ile Arg Arg Thr Ser Arg Gln Tyr Thr Leu Asp Ile Gly Ser Lys Leu
 515 520 525
 Arg Phe
 530
 <210>483
 <211>280
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>483
 Gly Met Pro Leu Ser Phe Lys Ser Ser Ser Phe Cys Leu Leu Ala Cys
 1 5 10 15
 Leu Cys Ser Ala Ser Cys Ala Phe Ala Glu Thr Arg Leu Gly Gly Asn
 20 25 30
 Phe Val Pro Pro Ile Thr Asn Gln Gly Glu Glu Ile Leu Leu Thr Ser
 35 40 45
 Asp Phe Val Cys Ser Asn Phe Leu Gly Ala Ser Phe Ser Ser Ser Phe
 50 55 60
 Ile Asn Ser Ser Ser Asn Leu Ser Leu Leu Gly Lys Gly Leu Ser Leu
 65 70 75 80
 Thr Phe Thr Ser Cys Gln Ala Pro Thr Asn Ser Asn Tyr Ala Leu Leu
 85 90 95
 Ser Ala Ala Glu Thr Leu Thr Phe Lys Asn Phe Ser Ser Ile Asn Phe
 100 105 110
 Thr Gly Asn Gln Ser Thr Gly Leu Gly Gly Leu Ile Tyr Gly Lys Asp
 115 120 125
 Ile Val Phe Gln Ser Ile Lys Asp Leu Ile Phe Thr Thr Asn Arg Val
 130 135 140
 Ala Tyr Ser Pro Ala Ser Val Thr Thr Ser Ala Thr Pro Ala Ile Thr
 145 150 155 160
 Thr Val Thr Thr Gly Ala Ser Ala Leu Gln Pro Thr Asp Ser Leu Thr
 165 170 175
 Val Glu Asn Ile Ser Gln Ser Ile Lys Phe Phe Gly Asn Leu Ala Asn
 180 185 190
 Phe Gly Ser Ala Ile Ser Ser Ser Pro Thr Ala Val Val Lys Phe Ile
 195 200 205
 Asn Asn Thr Ala Thr Met Ser Phe Ser His Asn Phe Thr Ser Ser Gly
 210 215 220
 Gly Gly Val Ile Tyr Gly Gly Ser Ser Leu Leu Phe Glu Asn Asn Ser
 225 230 235 240
 Gly Cys Ile Ile Phe Thr Ala Asn Ser Cys Val Asn Ser Leu Lys Gly
 245 250 255
 Val Thr Pro Ser Ser Gly Thr Tyr Ala Leu Gly Ser Gly Gly Ala Ser
 260 265 270
 Ala Ser Leu Arg Glu Leu Ser Asn
 275 280
 <210>484
 <211>82
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>484
 Ile Thr Pro Pro Pro Asp Glu Val Lys Leu Trp Glu Lys Leu Met Val
 1 5 10 15

Ala Val Leu Leu Met Asn Leu Thr Thr Ala Val Gly Glu Leu Leu Ile
 20 25 30
 Ala Glu Pro Lys Leu Ala Arg Phe Pro Lys Asn Leu Ile Asp Trp Asp
 35 40 45
 Met Phe Ser Thr Val Ser Glu Ser Val Gly Trp Arg Ala Glu Ala Pro
 50 55 60
 Val Val Thr Val Val Ile Ala Gly Val Ala Asp Val Val Thr Asp Ala
 65 70 75 80
 Gly Glu

<210>485

<211>492

<212>PRT

<213>Chlamydia pneumoniae

<400>485

Lys Gln Phe Trp Met His His Leu His Arg Gln Leu Leu Cys Glu Gln
 1 5 10 15
 Leu Lys Arg Arg His Pro Phe Ile Arg Asn Leu Cys Phe Arg Lys Trp
 20 25 30
 Arg Ser Ile Cys Ile Pro Thr Gly Thr Phe Glu Leu Lys Asn Asn Gln
 35 40 45
 Gly Lys Cys Thr Phe Ser Tyr Asn Gly Thr Pro Asn Asp Ala Gly Ala
 50 55 60
 Ile Tyr Ala Glu Thr Cys Asn Ile Val Gly Asn Gln Gly Ala Leu Leu
 65 70 75 80
 Leu Asp Ser Asn Thr Ala Ala Arg Asn Gly Gly Ala Ile Cys Ala Lys
 85 90 95
 Val Leu Asn Ile Gln Gly Arg Gly Pro Ile Glu Phe Ser Arg Asn Arg
 100 105 110
 Ala Glu Lys Gly Gly Ala Ile Phe Ile Gly Pro Ser Val Gly Asp Pro
 115 120 125
 Ala Lys Gln Thr Ser Thr Leu Thr Ile Leu Ala Ser Glu Gly Asn Ile
 130 135 140
 Ala Phe Gln Gly Asn Met Leu Asn Thr Lys Pro Gly Ile Arg Asn Ala
 145 150 155 160
 Ile Thr Val Glu Ala Gly Gly Glu Ile Val Ser Leu Ser Ala Gln Gly
 165 170 175
 Gly Ser Arg Leu Val Phe Tyr Asp Pro Ile Thr His Ser Leu Pro Thr
 180 185 190
 Thr Ser Pro Ser Asn Lys Asp Ile Thr Ile Asn Ala Asn Gly Ala Ser
 195 200 205
 Gly Ser Val Val Phe Thr Ser Lys Gly Leu Ser Ser Thr Glu Leu Leu
 210 215 220
 Leu Pro Ala Asn Thr Thr Thr Ile Leu Leu Gly Thr Val Lys Ile Ala
 225 230 235 240
 Ser Gly Glu Leu Lys Ile Thr Asp Asn Ala Val Val Asn Val Leu Gly
 245 250 255
 Phe Ala Thr Gln Gly Ser Gly Gln Leu Thr Leu Gly Ser Gly Gly Thr
 260 265 270
 Leu Gly Leu Ala Thr Pro Thr Gly Ala Pro Ala Ala Val Asp Phe Thr
 275 280 285
 Ile Gly Lys Leu Ala Phe Asp Pro Phe Ser Phe Leu Lys Arg Asp Phe
 290 295 300
 Val Ser Ala Ser Val Asn Ala Gly Thr Lys Asn Val Thr Leu Thr Gly
 305 310 315 320
 Ala Leu Val Leu Asp Glu His Asp Val Thr Asp Leu Tyr Asp Met Val
 325 330 335
 Ser Leu Gln Ser Pro Val Ala Ile Pro Ile Ala Val Phe Lys Gly Ala
 340 345 350
 Thr Val Thr Lys Thr Gly Phe Pro Asp Gly Glu Ile Ala Thr Pro Ser
 355 360 365
 His Tyr Gly Tyr Gln Gly Lys Trp Ser Tyr Thr Trp Ser Arg Pro Leu
 370 375 380
 Leu Ile Pro Ala Pro Asp Gly Gly Phe Pro Gly Gly Pro Ser Pro Ser

385 390 395 400
 Ala Asn Thr Leu Tyr Ala Val Trp Asn Ser Asp Thr Leu Val Arg Ser
 405 410 415
 Thr Tyr Ile Leu Asp Pro Glu Arg Tyr Gly Glu Ile Val Ser Asn Ser
 420 425 430
 Leu Trp Ile Ser Phe Leu Gly Asn Gln Ala Phe Ser Asp Ile Leu Gln
 435 440 445
 Asp Val Leu Leu Ile Asp His Pro Gly Leu Ser Ile Thr Ala Lys Ala
 450 455 460
 Leu Gly Ala Tyr Val Glu His Thr Pro Arg Gln Gly His Glu Gly Phe
 465 470 475 480
 Ser Gly Arg Tyr Gly Gly Tyr Gln Val Arg Tyr Leu
 485 490

<210>486

<211>264

<212>PRT

<213>Chlamydia pneumoniae

<400>486

Gly Leu Phe Arg Ser Leu Trp Arg Leu Pro Ser Ala Leu Ser Met Asn
 1 5 10 15
 Tyr Thr Asp His Thr Thr Leu Gly Leu Ser Phe Gly Gln Leu Tyr Gly
 20 25 30
 Lys Thr Asn Ala Asn Pro Tyr Asp Ser Arg Cys Ser Glu Gln Met Tyr
 35 40 45
 Leu Leu Ser Phe Phe Gly Gln Phe Pro Ile Val Thr Gln Lys Ser Glu
 50 55 60
 Ala Leu Ile Ser Trp Lys Ala Ala Tyr Gly Tyr Ser Lys Asn His Leu
 65 70 75 80
 Asn Thr Thr Tyr Leu Arg Pro Asp Lys Ala Pro Lys Ser Gln Gly Gln
 85 90 95
 Trp His Asn Asn Ser Tyr Tyr Val Leu Ile Ser Ala Glu His Pro Phe
 100 105 110
 Leu Asn Trp Cys Leu Leu Thr Arg Pro Leu Ala Gln Ala Trp Asp Leu
 115 120 125
 Ser Gly Phe Ile Ser Ala Glu Phe Leu Gly Gly Trp Gln Ser Lys Phe
 130 135 140
 Thr Glu Thr Gly Asp Leu Gln Arg Ser Phe Ser Arg Gly Lys Gly Tyr
 145 150 155 160
 Asn Val Ser Leu Pro Ile Gly Cys Ser Ser Gln Trp Phe Thr Pro Phe
 165 170 175
 Lys Lys Ala Pro Ser Thr Leu Thr Ile Lys Leu Ala Tyr Lys Pro Asp
 180 185 190
 Ile Tyr Arg Val Asn Pro His Asn Ile Val Thr Val Val Ser Asn Gln
 195 200 205
 Glu Ser Thr Ser Ile Ser Gly Ala Asn Leu Arg Arg His Gly Leu Phe
 210 215 220
 Val Gln Ile His Asp Val Val Asp Leu Thr Glu Asp Thr Gln Ala Phe
 225 230 235 240
 Leu Asn Tyr Thr Phe Asp Gly Lys Asn Gly Phe Thr Asn His Arg Val
 245 250 255
 Ser Thr Gly Leu Lys Ser Thr Phe
 260

<210>487

<211>357

<212>PRT

<213>Chlamydia pneumoniae

<400>487

Asn Arg Gln Arg Leu His Ala Pro Leu Ser Gln Gly Ser His Cys His
 1 5 10 15
 Ser Tyr Leu Ala Asp Leu Thr His Glu Glu Leu Lys Ile Leu Leu Phe
 20 25 30
 Ser Ala Phe Val Asp Ala Lys Asn Ile Ser Lys Lys Glu Leu Arg Glu
 35 40 45
 Val Ser Leu Asn Phe Ala Asn Asp Thr Ser Val Glu Ser Trp Leu Arg

50 55 60
 Phe Leu Leu Leu Val Ser Tyr Asp Glu Lys Glu Lys Asp Val Val Val
 65 70 75 80
 Val Cys Asn His Ser Glu Pro Asn Ile Leu Gly Leu Pro Pro Glu Ala
 85 90 95
 Val Ser Gln Leu Ile Glu Glu Leu Ser Asp Glu Gly Tyr Ser Tyr Leu
 100 105 110
 Asn Val Val Arg Cys Asp Leu Ser Gly Glu Thr Thr Val Gln Gln Arg
 115 120 125
 Leu Leu Leu Asn Ala Asp Glu Gly Arg Ser Met Thr Val Val Ile Ser
 130 135 140
 Glu Leu Pro Glu Gly His Pro Asp Ile Arg Asn Leu Gln Leu Ala Ser
 145 150 155 160
 Glu Arg Ile Phe Val Ser Arg Glu Lys Glu Ala Ala Asp Ala Tyr Ala
 165 170 175
 Ser Gly Cys Lys Val Val Ala Phe Asp Asp Glu His Leu Pro Trp Val
 180 185 190
 Ser Ser His Ile Ala Tyr Ala Glu Glu Ile Arg Glu Lys Gln Glu Gln
 195 200 205
 Thr Met Gln Gly Ser Leu Thr Glu Glu Gln Leu Gly Ala Leu Leu Cys
 210 215 220
 Asn Thr Val Ser Thr Glu Lys Asn Leu Ala Phe Ala Leu Asp Ala Val
 225 230 235 240
 Ile Lys Gln Ser Val Trp Arg Phe Arg Asn Pro Asp Leu Phe Ala Tyr
 245 250 255
 Glu Arg Glu Ala Leu Glu Ala Ser Val Thr Asp Ala Leu Val Ser Tyr
 260 265 270
 Val Ser Asn Leu Asp Met Ile Pro Tyr Thr Ser Ser Gln Gly Ile Val
 275 280 285
 Ile Glu Asp Ser Ser Ile Val Arg Thr Ser Gln Glu His Thr Leu Ile
 290 295 300
 Val Asn Cys Ala Ala Phe Asp Lys Leu Ala Ser Gln Ile Glu Phe Leu
 305 310 315 320
 Cys Pro Ser Asp Val Leu Pro Ile Ser Gly Lys Asp Pro Leu Ile Ser
 325 330 335
 Asp Asp Glu Asp Glu Glu Leu Asn Pro Lys Val Ser Ser Ala Ala Asp
 340 345 350
 Ser Lys Asp Lys Thr
 355

<210>488

<211>347

<212>PRT

<213>Chlamydia pneumoniae

<400>488

Ile Pro Cys Thr Phe Glu Ser Lys Arg Lys Phe Leu Met Thr His Cys
 1 5 10 15
 Leu His Gly Trp Phe Ser Val Val Arg His His Phe Val Gln Ala Phe
 20 25 30
 Asn Phe Ser Arg Pro Leu Tyr Ser Arg Ile Thr His Phe Ala Leu Gly
 35 40 45
 Val Ile Lys Ala Ile Pro Ile Val Gly His Leu Val Met Gly Val Asp
 50 55 60
 Trp Leu Ile Ser His Cys Phe Glu Arg Gly Val Ser His Pro Gly Phe
 65 70 75 80
 Pro Ser Asp Ile Ala Pro Ile Leu Lys Val Glu Lys Ile Ala Gly Arg
 85 90 95
 Asp His Ile Ser Arg Ile Glu Asn Gln Leu Lys Ser Leu Arg Lys Thr
 100 105 110
 Ile Glu Val Glu Asp Leu Asp Lys Val His Gly Gln Tyr Gln Glu Asn
 115 120 125
 Pro Tyr Ala Asp Met Ala Ser Ser Glu Val Leu Lys Leu Asp Lys Gly
 130 135 140
 Val His Val Ser Glu Leu Gly Lys Ala Phe Ser Arg Val Arg Asn Arg
 145 150 155 160

Ile Thr Arg Ser Tyr Ser Tyr Ala Pro Thr Pro Gln Leu Asp Ser Ile
 163 170 175
 Ala Ile Val Gly Ile Asp Leu Val Ser Pro Glu Glu Gln Glu Asn Leu
 180 185 190
 Val Arg Leu Ala Asn Glu Val Ile Gln Leu Tyr Pro Lys Ser Lys Thr
 195 200 205
 Thr Leu Tyr Leu Leu Ile Asp Phe Asn Xaa Glu Trp Val Gly Asp Ile
 210 215 220
 Ser Ser Asp Lys Glu Lys Gln Leu Arg Ser Leu Gly Leu His Ser Glu
 225 230 235 240
 Val Gln Cys Leu Ser Val Leu Glu Pro Gln Gly Ala Glu Gly Glu Asp
 245 250 255
 Thr Lys His Phe Asp Leu Met Val Gly Cys Tyr Gly Lys Asp Ser Tyr
 260 265 270
 Leu Arg Glu Gly Lys Ile Leu Gln Gln Ala Leu Gly Thr Ser Leu Gly
 275 280 285
 Thr Val Pro Trp Val Asn Val Met His Thr Leu Pro Ser Arg Tyr Arg
 290 295 300
 Ser Arg Leu Ser Leu Pro Ile Asn Thr Glu Lys Asp Lys Thr Glu Leu
 305 310 315 320
 Tyr Lys Glu Ile Ser Arg Thr His His Gln Leu His Thr Leu Gly Met
 325 330 335
 Gly Leu Gly Ala Gln Asp Phe Arg Asp Cys Ser
 340 345

<210>489

<211>636

<212>PRT

<213>Chlamydia pneumoniae

<400>489

Val Phe Leu Pro Ser Arg Val Met Ala Ser Cys Leu Ser Ala Trp Phe
 1 5 10 15
 Ser Ile Val Arg Glu His Phe Tyr Arg Ala Phe Asp Phe Ser Leu Pro
 20 25 30
 Phe Cys Ala Arg Ile Thr Glu Phe Val Leu Gly Val Ile Lys Gly Ile
 35 40 45
 Pro Val Val Gly His Ile Ile Val Gly Ile Glu Trp Leu Val Ser Arg
 50 55 60
 Tyr Leu Glu Ser Phe Val Thr Lys Pro Thr Phe Val Ser Asp Val Val
 65 70 75 80
 Ser Leu Leu Lys Thr Glu Lys Val Ala Gly Arg Asp His Ile Ala Arg
 85 90 95
 Val Val Glu Thr Leu Lys Arg Gln Arg Val Ala Val Ala Pro Glu Asp
 100 105 110
 Glu Asp Lys Val His Gly Lys Ile Pro Val His Pro Phe Gly Gly Ile
 115 120 125
 Gln Pro Val Glu Val Leu Thr Leu Tyr Pro Glu Val Gln Asp Ala Thr
 130 135 140
 Leu Gly Leu Ala Phe Ser Lys Ile Arg Asn Arg Val Arg Gln Ala Tyr
 145 150 155 160
 Leu Gln Ala Pro Arg Pro Lys Leu Gln Lys Ile Tyr Ile Ile Gly Asn
 165 170 175
 Asp Met Asn Pro Phe Glu Val Asp Asp Phe Leu His Leu Ala Arg Leu
 180 185 190
 Cys Asn Glu Thr Gln Arg Leu Tyr Pro Asp Ala Thr Ile Ser Leu Tyr
 195 200 205
 Leu Thr Ala Ser Gly Gly Arg Asn Ala Met Asp Lys Lys Asn Arg Lys
 210 215 220
 Leu Leu Ser Asp Cys Glu Leu Asn Pro Lys Ile Ala Cys Leu Asp Phe
 225 230 235 240
 Asn Gln Gly Asp Val Val Lys Gln Ala Thr Cys Asp Cys Trp Met Val
 245 250 255
 Tyr His Gly Glu Asn Asp Gln Gly Thr Leu Asn Gln Ile Gln Glu Glu
 260 265 270
 Leu Glu Lys Ser Gly Glu Glu Thr Pro Trp Ile His Val Gly Gln Lys

275 280 285
 Pro Leu Ser Gln Ser Leu Trp Asp Phe Ser Pro Phe Ser Ser Leu Glu
 290 295 300
 Met Lys Gly Asp Lys Glu Lys Ala Leu Glu Tyr Ser Glu Leu Glu Lys
 305 310 315 320
 Glu Gln Leu Tyr Ser Arg Leu Val Tyr Val Gly Glu Arg Ser Ser Val
 325 330 335
 Leu Ser Leu Gly Phe Gly Asp Ser Arg Ser Gly Ile Leu Met Asp Pro
 340 345 350
 Lys Arg Val His Ala Pro Leu Ser Glu Gly His Tyr Cys His Ser Tyr
 355 360 365
 Leu Ala Asp Leu Glu Asn Pro Gly Leu Gln Lys Thr Ile Leu Ala Ala
 370 375 380
 Phe Leu Asn Pro Lys Glu Leu Ser Ser Thr Ile Leu Gln Pro Ile Ser
 385 390 395 400
 Leu Asn Leu Ile Leu Asn Ser Lys Thr Tyr Leu Arg Gln His Phe Gly
 405 410 415
 Phe Phe Glu Arg Met Ser Arg Ser Asp Arg Asn Val Val Val Val
 420 425 430
 Cys Asp Ser Trp Trp Gly Thr Asp Trp Lys Glu Glu Pro Ser Phe Gln
 435 440 445
 His Phe Ile Met Glu Leu Glu Cys Arg Gly Tyr Ser His Phe Asn Ile
 450 455 460
 Phe Ala Phe Arg Ser Asn Ser Met Cys Val Glu Glu Arg Arg Ile Leu
 465 470 475 480
 Asn Glu Ser Ser Gln Glu Lys Ala Phe Thr Met Ile Phe Cys Glu Asp
 485 490 495
 Ser Val Ser Gln Gly Asp Ile Arg Cys Leu His Leu Ala Ser Glu Gly
 500 505 510
 Met Leu Cys Gly Lys Glu Cys Tyr Ala Val Asp Val Tyr Thr Ser Gly
 515 520 525
 Cys Ala Asn Phe Met Met Glu Glu Val Leu Thr Leu Glu Arg Glu Ser
 530 535 540
 Asn Leu Trp Asn Arg Lys His Gly Leu Trp Lys Arg Glu Val Arg Lys
 545 550 555 560
 Gln Lys Gln Glu Ala Ala Leu Asp Gln Asp Glu Ser Glu Ile Tyr Val
 565 570 575
 Cys Asn Gln Leu Thr Ala Gln Gln Asn Phe Ala Cys Ser Leu Asp Ala
 580 585 590
 Ala Ile Arg Gln Ser Ile Trp Arg Ser Arg Met Pro Glu Leu Leu Ser
 595 600 605
 Ile Glu Arg Arg Ala Leu Gly Glu Gln Leu Phe Thr Thr Val His His
 610 615 620
 Tyr Leu Thr Thr Gln Lys Lys Ile Leu Arg Gly Ile
 625 630 635

<210>490

<211>703

<212>PRT

<213>Chlamydia pneumoniae

<400>490

Tyr Phe Leu Cys Cys Tyr Leu Lys Leu Phe Val Ser Asn Phe Ile Phe
 1 5 10 15
 Phe Val Xaa Met Pro Ile Pro Tyr Ile Ser Ser Trp Ile Ser Thr Val
 20 25 30
 Arg Gln His Phe Val Lys Ala Phe Asp Phe Ser Arg Pro Phe Cys Ser
 35 40 45
 Arg Val Thr Asn Phe Ala Leu Gly Val Ile Lys Ala Ile Pro Ile Val
 50 55 60
 Gly His Ile Val Met Gly Met Glu Trp Leu Val Ser Ser Cys Val Ala
 65 70 75 80
 Gly Ile Ile Thr Arg Ser Ser Phe Thr Ser Asp Val Val Gln Ile Val
 85 90 95
 Lys Thr Glu Lys Ala Leu Gly Arg Asp His Ile Ser Arg Val Ala Glu
 100 105 110

Ile Leu Gln Arg Glu Arg Gly Thr Ile Thr Pro Glu Asn Gln Asp Lys
 115 120 125
 Val His Gly Lys Phe Pro Val Cys Pro Phe Gly Arg Leu Lys Ser Glu
 130 135 140
 Glu Thr Leu Lys Leu Lys Pro Gly Glu Arg Gly Gly Thr Leu Asp Thr
 145 150 155 160
 Val Phe Ser Pro Ile Arg Thr Arg Val Thr Arg Ala Tyr Leu Gln Ala
 165 170 175
 Pro Arg Pro Glu Ile Arg Thr Ile Ser Ile Val Gly Ser Lys Leu Lys
 180 185 190
 Thr Pro Gln Asp Phe Ser Gln Phe Val Ser Leu Ala Asn Glu Thr Gln
 195 200 205
 Arg Leu His Pro Glu Ala Leu Val Cys Leu Tyr Leu Thr Gly Leu Asn
 210 215 220
 Arg Glu Ser Gln Met Cys Asp Thr Thr Thr Ala Glu Lys Lys Gln Tyr
 225 230 235 240
 Leu His Asn Ser Gly Leu Asp Ser Arg Ile Gln Cys Lys Asp Ser Lys
 245 250 255
 Glu Asp Asp Ala Gly Ser Pro Glu Asn Pro Glu Leu Trp Ile Gly Tyr
 260 265 270
 Tyr Ser Arg Glu Gln Gln His Asn Ile Asp Gly Gln Tyr Ile Gln Gln
 275 280 285
 Cys Leu Gly Lys Ser Ala Asp Pro Ile Pro Trp Ile His Val Thr Glu
 290 295 300
 Asp Thr Lys Asp Phe Tyr Tyr Pro Pro Asn Phe Thr Ser Tyr Ser His
 305 310 315 320
 Thr Arg Gln Ser Thr Asp Pro Thr Ser Pro Pro Arg Leu Pro Glu Ser
 325 330 335
 Glu Gly Asp Lys Asp Ser Leu Tyr Gly Gln Leu Ser Arg Ser Tyr His
 340 345 350
 His Glu Tyr Met Leu Gly Leu Gly Leu Lys Pro Glu Asp Ala Gly Leu
 355 360 365
 Leu Met Asp Pro Asp Arg Ile Tyr Ala Pro Leu Ser Gln Gly His Tyr
 370 375 380
 Cys His Ser Tyr Leu Ala Asp Ile Glu Asn Glu Asp Leu Arg Thr Leu
 385 390 395 400
 Val Leu Ser Pro Phe Leu Asp Pro Gly Asn Leu Ser Ser Glu Asp Leu
 405 410 415
 Arg Pro Val Ala Phe Asn Ile Ala Arg Leu Pro Leu Glu Leu Asp Ser
 420 425 430
 Leu Phe Phe Arg Leu Val Ala Gly Gln Gln Glu Gly Arg Asn Ile Val
 435 440 445
 Thr Leu Ala His Gly Thr Pro Arg Pro Glu Asp Leu Asp Pro Asp Ser
 450 455 460
 Met Asn Ile Leu Thr Arg Arg Leu Gln Met Ser Gly Tyr Ser Tyr Leu
 465 470 475 480
 Asn Ile Phe Ser Tyr Lys Ser Arg Lys Met Ile Val Lys Glu Arg Gln
 485 490 495
 Phe Phe Gly Asp Arg Ser Glu Gly Lys Ser Phe Thr Leu Ile Leu Phe
 500 505 510
 Glu Asp Pro Ile Ser Ala Ala Asp Phe Arg Cys Leu Gln Leu Ala Ala
 515 520 525
 Glu Gly Met Val Ala Lys Asp Leu Pro Ser Val Ala Asp Ile Cys Ala
 530 535 540
 Ser Gly Cys Ser Cys Ile Gln Phe Ser Glu Met Gln Ser Pro Gln Ala
 545 550 555 560
 Ile Glu Tyr Arg Gln Trp Glu Ala Arg Val Glu Asp Glu Ala Gly Glu
 565 570 575
 Glu Ala Arg Glu Pro Val Ile Tyr Ser Gln Asp Gln Leu Ser Ser Met
 580 585 590
 Leu Thr Thr Gln Gln Asn Phe Val Phe Ser Leu Asp Ala Val Val Lys
 595 600 605
 Gln Ala Ile Trp Arg Phe Arg Ser Lys Gly Leu Leu Thr Met Glu Arg
 610 615 620

Lys Ala Leu Gly Glu Glu Phe Leu Thr Ala Ile Phe Ser Tyr Leu Gly
 625 630 635 640
 Ser Gln Glu Arg Asn Glu Asn Met Gly Lys Arg Thr Thr Glu Glu His
 645 650 655
 Glu Val Val Ile Ser Phe Glu Glu Leu Asp Arg Met Val Gln Val Leu
 660 665 670
 Pro Ala Glu Val Pro Ala Asp Ser Gly Asn Asp Pro Thr His Pro Val
 675 680 685
 Pro Asn Pro Asp Ser Asn Pro Asp Ser Ser Gln Asn Glu Gly Ser
 690 695 700

<210>491

<211>148

<212>PRT

<213>Chlamydia pneumoniae

<400>491

Ser Thr Lys Ile Gln Met His Pro Gly Leu Arg Asn Trp Arg Thr Ser
 1 5 10 15
 Thr Asn Lys Leu Arg Glu Glu Gly Ser Val Ser Phe Arg Glu Tyr Phe
 20 25 30
 Arg Ala Tyr Met Cys Asp Lys Ile Val Ala Gln Lys Asn Phe Leu Phe
 35 40 45
 Thr Leu Asp Ala Val Ile Lys Gln Ala Gly Trp Arg Ser Gln Glu Lys
 50 55 60
 Leu Asn Leu Phe Tyr Val Glu Ser Gln Ala Leu Gly Arg Glu Ile Lys
 65 70 75 80
 Val Ser Leu Glu Glu Tyr Ile Gln Ser Met Val Gly Ile Leu Gly Ser
 85 90 95
 Gln Arg Thr Lys Lys Ser Phe Lys Phe Ser Val Asp Phe Thr Pro Leu
 100 105 110
 Glu Gln Ala Leu Gln Glu Arg Cys Ser Ser Asp Asp Asp Glu Asp Ala
 115 120 125
 Thr Ala Ala Ser Thr Ala Thr Gly Ala Thr Ala Ser Pro Thr Asp Met
 130 135 140
 His Glu Asp Glu
 145

<210>492

<211>283

<212>PRT

<213>Chlamydia pneumoniae

<400>492

Val Ile Gln His Leu Leu Asn Phe Ala Leu Glu Glu Thr Pro Ser Ile
 1 5 10 15
 Ser Val Gln Tyr Gln Glu Gln Glu Lys Leu Ser Pro Cys Asp His Ser
 20 25 30
 Pro Glu Ile Gly Lys Lys Lys Arg Trp Asn Lys Leu Glu Ser Phe Ser
 35 40 45
 Thr Tyr Cys Ser Leu Phe Met Ser Val Lys Asp His Tyr Lys Leu Asn
 50 55 60
 Leu Gly Ile Gln Asn Ser Leu Ser Gly Trp Leu Leu Asp Pro Tyr Arg
 65 70 75 80
 Val Cys Ala Pro Leu Ser Ser Pro Tyr Ser Cys Pro Ser Tyr Leu Leu
 85 90 95
 Asp Leu Gln Asn Lys Glu Leu Arg Arg Ser Leu Leu Ser Thr Phe Leu
 100 105 110
 Asp Pro Lys Asn Leu Thr Ser Glu Thr Phe Arg Ser Val Ser Ile Asn
 115 120 125
 Phe Gly Asn Ser Ser Phe Gly Gln Arg Trp Ser Glu Phe Leu Ser Arg
 130 135 140
 Val Leu His Asp Glu Lys Glu Lys His Val Ala Val Val Cys Asn Asp
 145 150 155 160
 Ala Lys Leu Leu Glu Glu Gly Leu Ser Pro Glu Ala Leu Ser Leu Leu
 165 170 175
 Glu Glu Asp Leu Arg Glu Ser Gly Tyr Ser Tyr Leu Asn Ile Leu Ser
 180 185 190

Val Ser Pro Glu Gly Val Ser Lys Val Gln Glu Arg Gln Ile Leu Arg
 195 200 205
 Arg Asp Leu Gln Gly Arg Ser Phe Thr Val Met Ile Thr Asp Leu Pro
 210 215 220
 Leu Gly Ser Glu Asp Ile Arg Ser Leu Gln Leu Ala Ser Asp Arg Ile
 225 230 235 240
 Leu Val Ser Ser Ser Leu Asp Ala Ala Asp Ala Cys Ala Ser Gly Cys
 245 250 255
 Lys Val Leu Val Tyr Glu Asn Pro Asn Ala Ser Trp Ala Gln Glu Leu
 260 265 270
 Glu Asn Phe Tyr Lys Gln Val Glu Arg Arg Arg
 275 280

<210>493

<211>169

<212>PRT

<213>Chlamydia pneumoniae

<400>493

Leu Glu Ser Pro His Phe Pro Arg Arg Ser Arg Gln Ser Thr Arg Glu
 1 5 10 15
 Asn Pro Arg Arg Ser Leu Arg Arg Tyr His Thr His Arg Asn Cys Pro
 20 25 30
 Thr Phe Ser Leu Ile Glu Glu Leu Ser Thr Val Asp Glu Ala Leu Gln
 35 40 45
 Gly Val Arg Ser Arg Leu Thr Tyr Ala Tyr Arg Ser Val Glu Lys Pro
 50 55 60
 Met Ile Gln Asp Leu Ala Leu Val Gly Phe Gly Leu Arg Asp Ser Ala
 65 70 75 80
 Asp Leu Ile Asn Phe Val Arg Leu Ala Asn Gly Val Gln Asn His Tyr
 85 90 95
 Pro His Thr Lys Val Lys Leu Tyr Leu Ala Lys Asn Leu Ala Asp Val
 100 105 110
 Trp Asp Cys Glu Ile Ser Glu Glu Glu Lys Gly Gln Leu Arg Ala Leu
 115 120 125
 Gly Leu Asp Pro Lys Ile Glu Ser Ile Ser Leu Thr Ser Ala Gly Leu
 130 135 140
 Pro Ser Val Pro Glu Val Ala Thr Val Asp Phe Met Ile Thr Cys Tyr
 145 150 155 160
 Gly Lys Asp Gln Glu Val Gln Asp Pro
 165

<210>494

<211>135

<212>PRT

<213>Chlamydia pneumoniae

<400>494

Ile Ser Thr Val Ala Cys Pro Ser Ile Ser Ser Trp Phe Thr Val Val
 1 5 10 15
 Arg Gln His Phe Val Asn Ala Phe Asp Phe Thr His Pro Val Cys Ser
 20 25 30
 Arg Ile Thr Asn Phe Ala Leu Gly Ile Ile Lys Ala Ile Pro Val Leu
 35 40 45
 Gly His Ile Val Met Gly Ile Glu Trp Leu Ile Ser Trp Ile Pro Arg
 50 55 60
 His Thr Val Arg His Gly Met Phe Thr Ser Asp Val Ser Ser Ala Ile
 65 70 75 80
 Lys Val Glu Gln Thr Arg Gly His Asn Cys Leu Ala Pro Leu Glu Ala
 85 90 95
 Tyr Leu Ser Ser Leu Arg Val Pro Ile Ser Gln Glu Asp Leu Gly Lys
 100 105 110
 Val His Gly Arg Thr Pro Glu Asp Pro Phe Val Asp Ile Thr Pro Thr
 115 120 125
 Glu Ile Val Gln Pro Ser Pro
 130 135

<210>495

<211>156

<212>PRT

<213>Chlamydia pneumoniae

<400>495

Phe Leu Ser Ala Leu Asp Ala Ala Asp Ala Cys Ala Ser Glu Cys Lys
 1 5 10 15
 Ile Leu Glu Tyr Glu Asp Pro Glu Gln Glu Trp Ala Gln Gln Tyr Ala
 20 25 30
 Ser Phe Tyr Arg Asn Ile Asp Arg Ala Gly Asp Leu Gln Arg Gln Gly
 35 40 45
 Ile Pro Gly Glu Pro Leu Gly Val Ser Ala Ser Thr Arg Val Val Leu
 50 55 60
 Glu Lys Asp Ile Val Phe Asn Leu Asn Ala Val Ile Gln Gln Ala Met
 65 70 75 80
 Trp Lys Phe Lys Lys Arg Asp Leu Phe Ala Val Glu Ser Gln Ala Leu
 85 90 95
 Gly Asp Asp Met Arg Arg Ala Leu Glu Gly Tyr Ile Gly Ser Ser Leu
 100 105 110
 Leu Val Glu Gly Thr Ile Gln Pro Gln Val Ala Cys Asn Val Asn Val
 115 120 125
 Ser Phe Ala Thr Leu Asp Glu Ala Val Cys Ala Ala Cys Asp Ser Ala
 130 135 140
 Gln Asp Ala Pro Ser Glu Glu Asn Asn Thr Asp Asp
 145 150 155

<210>496

<211>542

<212>PRT

<213>Chlamydia pneumoniae

<400>496

Leu Ile Phe Tyr Leu Phe Leu Asn Leu Tyr Ile Ala Cys Val Arg Phe
 1 5 10 15
 His Phe Gln Cys Trp Phe Asp Pro Met Ala Cys Tyr Ile Ser Ile Trp
 20 25 30
 Ile Ser Thr Val Lys Gln His Phe Ile Arg Ala Phe Asp Phe Thr Arg
 35 40 45
 Pro Leu Gly Ser Arg Ile Thr Asn Phe Ala Leu Gly Val Ile Lys Ala
 50 55 60
 Ile Pro Ile Leu Gly Cys Val Val Ile Gly Val Ser Trp Leu Val Ser
 65 70 75 80
 Thr Cys Ser Ala Arg Arg Phe Gly Lys Pro Ala Phe Thr Ser Asp Val
 85 90 95
 Ala Ser Ile Val Lys Ile Glu Lys Thr Arg Gly Tyr Asn Pro Leu Ala
 100 105 110
 Trp Val Glu Gln Tyr Leu Arg Gln Leu Arg Val Arg Leu Pro Glu Gly
 115 120 125
 Asp Leu Gly Lys Ile His Gly Lys Val Ser Arg Asp Tyr Val Cys Asp
 130 135 140
 Arg Thr Pro Gln Glu Asn Leu Asn Met Val Pro His Gln Tyr Leu Gly
 145 150 155 160
 Glu Leu Gly Arg Ala Phe Tyr Gly Ile Arg Asn Arg Val Thr Lys Ala
 165 170 175
 Tyr Gln Arg Val Thr Pro Leu Glu Val Pro Cys Leu Thr Leu Val Gly
 180 185 190
 Phe Asp Ile Leu Asp Pro Glu Asp Gln Val Asn Phe Val Arg Leu Ala
 195 200 205
 Asn Gly Ile Gln Thr Gln Tyr Pro Gln Thr Gln Ile Lys Leu Tyr Leu
 210 215 220
 Ile Ser Ile Gln Lys Ile Trp Asn Gln Cys Asp Gly Thr Ile Ser Gln
 225 230 235 240
 Glu Lys Glu Gln Gln Leu Arg Ser Leu Gly Leu Asp Ala Lys Ile Lys
 245 250 255
 Cys Val Ser Ala Pro Ala Leu Leu Leu Gln Lys Tyr Leu Gln Ser Glu
 260 265 270
 Asn Leu Pro Ser Cys Asp Leu Leu Ile Asn Tyr Tyr Gly Lys Gln Gln
 275 280 285

Ser Val Arg Asp Val Asp Ser Ile Lys Ser Leu Leu Asn Leu Ser Ser
 290 295 300
 Glu His Ile Pro Ala Ile Ser Val Thr Tyr Arg Pro Asp Asp Pro Phe
 305 310 315 320
 Tyr Ser Tyr Tyr Phe Phe Pro Gly Ser Gln Gly Gly Thr Ala Pro Asp
 325 330 335
 Gln Arg Ile Pro Trp Ser Glu Gln Glu His Leu Gln Thr Tyr Thr Thr
 340 345 350
 Leu Ser Asn Pro Arg Cys Asp Arg Tyr Ala Val His Leu Gly Met Glu
 355 360 365
 Asp Phe Ala Ser Gly Val Phe Leu Asp Pro Leu Arg Val Ser Ala Pro
 370 375 380
 Leu Ser Gly Glu Tyr Ser Cys Pro Ser Tyr Leu Leu Asp Leu Lys Ser
 385 390 395 400
 Glu Glu Leu Arg Cys Phe Leu Leu Ser Ala Phe Ile Asp Pro Asn Asn
 405 410 415
 Ser Gly Gln Gly Asn Pro Arg Pro Met Ser Ile Asn Phe Gly Asn Ser
 420 425 430
 Pro Leu Gly Gln Arg Trp Ser Glu Phe Leu Ser Arg Val Leu His Asp
 435 440 445
 Glu Thr Glu Lys His Val Ala Val Val Cys Asn Asn Pro Gln Leu Ile
 450 455 460
 Lys Lys Ser Phe Pro Ser His Ser Leu Ser Leu Leu Glu Asn Glu Leu
 465 470 475 480
 Glu Glu Ser Gly Tyr Ser Tyr Leu Asn Ile Val Ser Val Ser Gln Glu
 485 490 495
 Arg Thr Cys Val Lys Glu Arg Arg Ile Leu Ser Ser Asp Pro Ser Gly
 500 505 510
 Arg Ser Phe Thr Val Ile Leu Thr Asp Leu Pro Glu Gly Ser Ser Asp
 515 520 525
 Ile Arg Asn Leu Gln Leu Ala Ser Asp Arg Ile Leu Val Ser
 530 535 540

<210>497

<211>430

<212>PRT

<213>Chlamydia pneumoniae

<400>497

Leu Ser Ser Pro Tyr Glu Lys Thr Glu Gln Leu Leu Gly Thr Pro Asn
 1 5 10 15
 Cys Arg Thr Pro Arg Val Asn Ile Ser Thr Val Gly Ile Pro Ile Asp
 20 25 30
 Glu Thr Ser Asn Ala Phe Val Asp Ser Met Met Lys Gln Gly Val Gly
 35 40 45
 Gln Asp Ala Lys Glu Leu Tyr Thr Phe Leu Ser Arg Gly Asn Glu His
 50 55 60
 Tyr Gln Pro Cys Leu Trp Phe Ser Leu Glu Glu Glu Leu Gly Phe Leu
 65 70 75 80
 Phe Asp Glu Lys Met Leu Cys Ala Pro Leu Ser Glu Asp His Tyr Cys
 85 90 95
 His Ser Tyr Leu Val Asp Leu Val Asp Gln His Leu Lys Asp Leu Ile
 100 105 110
 Leu Ser Met Phe Leu Asp Pro Gln Asn Ile Ser Ala Gly Glu Leu Leu
 115 120 125
 Lys Val Ser Ile Asn Val Gly Asp Ser Phe Ser Pro Leu Gln Gln Lys
 130 135 140
 Asp Phe Leu Ser Met Val Leu Arg Asp Glu Thr Gly Lys Asn Val Val
 145 150 155 160
 Val Val Phe Lys Gly Val Leu Ser Leu Pro Ala Thr Gln Val Cys Lys
 165 170 175
 Leu Val Glu Glu Leu Asn Ser Lys Asp Tyr Ser Tyr Leu Asn Ile Phe
 180 185 190
 Ser Cys His Gly Asp Ser Ser Pro Gln Leu Leu Phe Arg Lys Glu Leu
 195 200 205
 Glu Gly Thr Ser Gly Arg Tyr Phe Thr Val Ile Cys Ala Leu Tyr Leu

210 215 220
 Gly Asp Thr Asp Met Arg Ser Leu Gln Leu Ala Ser Glu Arg Ile Met
 225 230 235 240
 Val Ser Arg Glu Phe Asp Leu Val Asp Ala Tyr Ala Ala Arg Cys Lys
 245 250 255
 Leu Leu Lys Ile Asp His Thr Asn Trp Arg Pro Gly Thr Phe Ser Arg
 260 265 270
 His Ala Asp Phe Ala Asp Ala Val Asp Val Ser Ala Gly Phe Asn Ser
 275 280 285
 Arg Glu Phe Lys Leu Ile Thr Gln Ala Asn Gln Gly Ile Leu Glu Ser
 290 295 300
 Gly Glu Leu Pro Leu Pro Ser Lys Thr Phe Trp Glu Gly Phe Leu Ala
 305 310 315 320
 Phe Cys Asp Arg Val Thr Val Thr Arg His Phe Ile Pro Met Leu Asp
 325 330 335
 Ala Ala Ile Lys Gln Ala Val Trp Thr His Lys His Pro Ser Leu Ile
 340 345 350
 Asp Lys Glu Cys Glu Ala Leu Asp Leu Lys Thr Gln Cys Leu Pro Ser
 355 360 365
 Ile Val Ser Tyr Leu Glu Tyr Val Thr Asn Ser His Glu Lys Thr Ser
 370 375 380
 Lys Gly Pro Phe Ile Gln Lys Glu Ile Ile Ala Asp Cys Ser Pro Leu
 385 390 395 400
 Lys Glu Ala Leu Phe Pro Gly Ser Asp Glu Asp Val Pro Ser Thr Ser
 405 410 415
 Glu Asp Pro Ser Asp Asp His Pro Ser Asp Leu Glu Asp Ser
 420 425 430

<210>498

<211>186

<212>PRT

<213>Chlamydia pneumoniae

<400>498

Ser Leu Glu Thr Arg Gly Arg Phe Ala Glu Ile Cys Leu Gln Leu Leu
 1 5 10 15
 Phe Phe Asp Ile Gln Ser Leu Lys Phe Leu Gln Leu Phe Ser Glu Gly
 20 25 30
 Thr Ala Leu Asn Leu Phe Arg Ile Phe Ala Pro Leu Arg Asn Arg Val
 35 40 45
 Thr Thr Glu Tyr Ser Arg Ala Arg Gln Pro Asp Leu His Arg Ile Ala
 50 55 60
 Ile Val Tyr Ile Gly Val Leu Asp Ser Glu Ser Ser Lys Ile Leu Glu
 65 70 75 80
 Arg Leu Ile Ser Tyr Met Ser Cys Ile Tyr Ser Glu Ser Gln Met Tyr
 85 90 95
 Leu Arg Phe Phe Met Gly Lys Asn Val Asn Gln Ser Ala Val Leu Ser
 100 105 110
 Lys Leu His Val Glu Asn Leu His Ile Arg Cys Gly Phe Phe Ser Glu
 115 120 125
 Asp Ala Val Pro Glu Ser Glu Pro Phe Asp Leu Ser Ile Tyr Val His
 130 135 140
 Thr Asp Arg Ser Cys Pro Leu Pro Thr Lys Lys Arg Ser Ser Ser Trp
 145 150 155 160
 Glu Leu Gln Thr Val Glu Leu Pro Glu Ser Ile Tyr Pro Gln Ser Glu
 165 170 175
 Phe Leu Leu Met Arg Pro Arg Met Leu Ser
 180 185

<210>499

<211>136

<212>PRT

<213>Chlamydia pneumoniae

<400>499

Leu Leu Glu Asn Asn Arg Phe Phe Leu Phe Phe Lys Val Lys Tyr Phe
 1 5 10 15
 Leu Lys Asp Ser Phe Leu Met Ser Tyr Tyr Phe Ser Leu Trp Tyr Leu

20 25 30
 Lys Val Gln Gln His Phe Gln Ala Ala Phe Asp Phe Thr Arg Ser Leu
 35 40 45
 Cys Ser Arg Ile Ser Asn Phe Ala Leu Gly Val Ile Ala Leu Leu Pro
 50 55 60
 Ile Ile Gly Gln Leu Tyr Val Gly Leu Asp Trp Leu Leu Ser Arg Ile
 65 70 75 80
 Lys Lys Pro Glu Phe Pro Ser Asp Val Asp Gln Ile Val Arg Val Glu
 85 90 95
 His Val Val Gly His Asp His Arg Ser Arg Val Glu Asp Ile Leu Lys
 100 105 110
 Arg Gln Arg Leu Ser Leu Glu Pro Arg Asp Glu Gly Lys Val Arg Gly
 115 120 125
 Asp Leu Pro Ser Ala Pro Phe Phe
 130 135
 <210>500
 <211>940
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>500
 Thr Ser Met Arg Phe Phe Cys Phe Gly Met Leu Leu Pro Phe Thr Phe
 1 5 10 15
 Val Leu Ala Asn Glu Gly Leu Gln Leu Pro Leu Glu Thr Tyr Ile Thr
 20 25 30
 Leu Ser Pro Glu Tyr Gln Ala Ala Pro Gln Val Gly Phe Thr His Asn
 35 40 45
 Gln Asn Gln Asp Leu Ala Ile Val Gly Asn His Asn Asp Phe Ile Leu
 50 55 60
 Asp Tyr Lys Tyr Tyr Arg Ser Asn Gly Gly Ala Leu Thr Cys Lys Asn
 65 70 75 80
 Leu Leu Ile Ser Glu Asn Ile Gly Asn Val Phe Phe Glu Lys Asn Val
 85 90 95
 Cys Pro Asn Ser Gly Gly Ala Ile Tyr Ala Ala Gln Asn Cys Thr Ile
 100 105 110
 Ser Lys Asn Gln Asn Tyr Ala Phe Thr Thr Asn Leu Val Ser Asp Asn
 115 120 125
 Pro Thr Ala Thr Ala Gly Ser Leu Leu Gly Gly Ala Leu Phe Ala Ile
 130 135 140
 Asn Cys Ser Ile Thr Asn Asn Leu Gly Gln Gly Thr Phe Val Asp Asn
 145 150 155 160
 Leu Ala Leu Asn Lys Gly Gly Ala Leu Tyr Thr Glu Thr Asn Leu Ser
 165 170 175
 Ile Lys Asp Asn Lys Gly Pro Ile Ile Ile Lys Gln Asn Arg Ala Leu
 180 185 190
 Asn Ser Asp Ser Leu Gly Gly Gly Ile Tyr Ser Gly Asn Ser Leu Asn
 195 200 205
 Ile Glu Gly Asn Ser Gly Ala Ile Gln Ile Thr Ser Asn Ser Ser Gly
 210 215 220
 Ser Gly Gly Gly Ile Phe Ser Thr Gln Thr Leu Thr Ile Ser Ser Asn
 225 230 235 240
 Lys Lys Leu Ile Glu Ile Ser Glu Asn Ser Ala Phe Ala Asn Asn Tyr
 245 250 255
 Gly Ser Asn Phe Asn Pro Gly Gly Gly Gly Leu Thr Thr Thr Phe Cys
 260 265 270
 Thr Ile Leu Asn Asn Arg Glu Gly Val Leu Phe Asn Asn Asn Gln Ser
 275 280 285
 Gln Ser Asn Gly Gly Ala Ile His Ala Lys Ser Ile Ile Ile Lys Glu
 290 295 300
 Asn Gly Pro Val Tyr Phe Leu Asn Asn Thr Ala Thr Arg Gly Gly Ala
 305 310 315 320
 Leu Leu Asn Leu Ser Ala Gly Ser Gly Asn Gly Ser Phe Ile Leu Ser
 325 330 335
 Ala Asp Asn Gly Asp Ile Ile Phe Asn Asn Asn Thr Ala Ser Lys His
 340 345 350

Ala	Leu	Asn	Pro	Pro	Tyr	Arg	Asn	Ala	Ile	His	Ser	Thr	Pro	Asn	Met
		355					360					365			
Asn	Leu	Gln	Ile	Gly	Ala	Arg	Pro	Gly	Tyr	Arg	Val	Leu	Phe	Tyr	Asp
		370				375					380				
Pro	Ile	Glu	His	Glu	Leu	Pro	Ser	Ser	Phe	Pro	Ile	Leu	Phe	Asn	Phe
385					390					395					400
Glu	Thr	Gly	His	Thr	Gly	Thr	Val	Leu	Phe	Ser	Gly	Glu	His	Val	His
			405						410					415	
Gln	Asn	Phe	Thr	Asp	Glu	Met	Asn	Phe	Phe	Ser	Tyr	Leu	Arg	Asn	Thr
			420					425					430		
Ser	Glu	Leu	Arg	Gln	Gly	Val	Leu	Ala	Val	Glu	Asp	Gly	Ala	Gly	Leu
		435				440						445			
Ala	Cys	Tyr	Lys	Phe	Phe	Gln	Arg	Gly	Gly	Thr	Leu	Leu	Gly	Gln	
	450					455					460				
Gly	Ala	Val	Ile	Thr	Thr	Ala	Gly	Thr	Ile	Pro	Thr	Pro	Ser	Ser	Thr
465					470					475					480
Pro	Thr	Thr	Val	Gly	Ser	Thr	Ile	Thr	Leu	Asn	His	Ile	Ala	Ile	Asp
			485						490					495	
Leu	Pro	Ser	Ile	Leu	Ser	Phe	Gln	Ala	Gln	Ala	Pro	Lys	Ile	Trp	Ile
		500						505					510		
Tyr	Pro	Thr	Lys	Thr	Gly	Ser	Thr	Tyr	Thr	Glu	Asp	Ser	Asn	Pro	Thr
	515						520					525			
Ile	Thr	Ile	Ser	Gly	Thr	Leu	Thr	Leu	Arg	Asn	Ser	Asn	Asn	Glu	Asp
	530					535					540				
Pro	Tyr	Asp	Ser	Leu	Asp	Leu	Ser	His	Ser	Leu	Glu	Lys	Val	Pro	Leu
545					550					555					560
Leu	Tyr	Ile	Val	Asp	Val	Ala	Ala	Gln	Lys	Ile	Asn	Ser	Ser	Gln	Leu
			565						570					575	
Asp	Leu	Ser	Thr	Leu	Asn	Ser	Gly	Glu	His	Tyr	Gly	Tyr	Gln	Gly	Ile
		580						585					590		
Trp	Ser	Thr	Tyr	Trp	Val	Glu	Thr	Thr	Thr	Ile	Thr	Asn	Pro	Thr	Ser
	595						600					605			
Leu	Leu	Gly	Ala	Asn	Thr	Lys	His	Lys	Leu	Leu	Tyr	Ala	Asn	Trp	Ser
	610					615						620			
Pro	Leu	Gly	Tyr	Arg	Pro	His	Pro	Glu	Arg	Arg	Gly	Glu	Phe	Ile	Thr
625					630					635					640
Asn	Ala	Leu	Trp	Gln	Ser	Ala	Tyr	Thr	Ala	Leu	Ala	Gly	Leu	His	Ser
			645						650					655	
Leu	Ser	Ser	Trp	Asp	Glu	Glu	Lys	Gly	His	Ala	Ala	Ser	Leu	Gln	Gly
		660						665					670		
Ile	Gly	Leu	Leu	Val	His	Gln	Lys	Asp	Lys	Asn	Gly	Phe	Lys	Gly	Phe
	675					680						685			
Arg	Ser	His	Met	Thr	Gly	Tyr	Ser	Ala	Thr	Thr	Glu	Ala	Thr	Ser	Ser
	690					695					700				
Gln	Ser	Pro	Asn	Phe	Ser	Leu	Gly	Phe	Ala	Gln	Phe	Phe	Ser	Lys	Ala
705					710					715					720
Lys	Glu	His	Glu	Ser	Gln	Asn	Ser	Thr	Ser	Ser	His	His	Tyr	Phe	Ser
			725						730					735	
Gly	Met	Cys	Ile	Glu	Asn	Thr	Leu	Phe	Lys	Glu	Trp	Ile	Arg	Leu	Ser
		740						745					750		
Val	Ser	Leu	Ala	Tyr	Met	Phe	Thr	Ser	Glu	His	Thr	His	Thr	Met	Tyr
		755					760					765			
Gln	Gly	Leu	Leu	Glu	Gly	Asn	Ser	Gln	Gly	Ser	Phe	His	Asn	His	Thr
	770					775						780			
Leu	Ala	Gly	Ala	Leu	Ser	Cys	Val	Phe	Leu	Pro	Gln	Pro	His	Gly	Glu
785					790					795					800
Ser	Leu	Gln	Ile	Tyr	Pro	Phe	Ile	Thr	Ala	Leu	Ala	Ile	Arg	Gly	Asn
			805						810					815	
Leu	Ala	Ala	Phe	Gln	Glu	Ser	Gly	Asp	His	Ala	Arg	Glu	Phe	Ser	Leu
		820						825					830		
His	Arg	Pro	Leu	Thr	Asp	Val	Ser	Leu	Pro	Val	Gly	Ile	Arg	Ala	Ser
		835				840						845			
Trp	Lys	Asn	His	His	Arg	Val	Pro	Leu	Val	Trp	Leu	Thr	Glu	Ile	Ser
	850					855						860			

Tyr Arg Ser Thr Leu Tyr Arg Gln Asp Pro Glu Leu His Ser Lys Leu
 865 870 875 880
 Leu Ile Ser Gln Gly Thr Trp Thr Thr Gln Ala Thr Pro Val Thr Tyr
 885 890 895
 Asn Ala Leu Gly Ile Lys Val Lys Asn Thr Met Gln Val Phe Pro Lys
 900 905 910
 Val Thr Leu Ser Leu Asp Tyr Ser Ala Asp Ile Ser Ser Ser Thr Leu
 915 920 925
 Ser His Tyr Leu Asn Val Ala Ser Arg Met Arg Phe
 930 935 940
 <210>501
 <211>969
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>501
 Asn Glu Ile Leu Thr Ile Ser Asp Gln Asn Arg Lys Ile Lys Glu Pro
 1 5 10 15
 Leu Val Ser Lys Thr Pro Pro Lys Phe Leu Phe Tyr Leu Gly Asn Phe
 20 25 30
 Thr Ala Cys Met Phe Gly Met Thr Pro Ala Val Tyr Ser Leu Gln Thr
 35 40 45
 Asp Ser Leu Glu Lys Phe Ala Leu Glu Arg Asp Glu Glu Phe Arg Thr
 50 55 60
 Ser Phe Pro Leu Leu Asp Ser Leu Ser Thr Leu Thr Gly Phe Ser Pro
 65 70 75 80
 Ile Thr Thr Phe Val Gly Asn Arg His Asn Ser Ser Gln Asp Ile Val
 85 90 95
 Leu Ser Asn Tyr Lys Ser Ile Asp Asn Ile Leu Leu Leu Trp Thr Ser
 100 105 110
 Ala Gly Gly Ala Val Ser Cys Asn Asn Phe Leu Leu Ser Asn Val Glu
 115 120 125
 Asp His Ala Phe Phe Ser Lys Asn Leu Ala Ile Gly Thr Gly Gly Ala
 130 135 140
 Ile Ala Cys Gln Gly Ala Cys Thr Ile Thr Lys Asn Arg Gly Pro Leu
 145 150 155 160
 Ile Phe Phe Ser Asn Arg Gly Leu Asn Asn Ala Ser Thr Gly Gly Glu
 165 170 175
 Thr Arg Gly Gly Ala Ile Ala Cys Asn Gly Asp Phe Thr Ile Ser Gln
 180 185 190
 Asn Gln Gly Thr Phe Tyr Phe Val Asn Asn Ser Val Asn Asn Trp Gly
 195 200 205
 Gly Ala Leu Ser Thr Asn Gly His Cys Arg Ile Gln Ser Asn Arg Ala
 210 215 220
 Pro Leu Leu Phe Phe Asn Asn Thr Ala Pro Ser Gly Gly Gly Ala Leu
 225 230 235 240
 Arg Ser Glu Asn Thr Thr Ile Ser Asp Asn Thr Arg Pro Ile Tyr Phe
 245 250 255
 Lys Asn Asn Cys Gly Asn Asn Gly Gly Ala Ile Gln Thr Ser Val Thr
 260 265 270
 Val Ala Ile Lys Asn Asn Ser Gly Ser Val Ile Phe Asn Asn Asn Thr
 275 280 285
 Ala Leu Ser Gly Ser Ile Asn Ser Gly Asn Gly Ser Gly Gly Ala Ile
 290 295 300
 Tyr Thr Thr Asn Leu Ser Ile Asp Asp Asn Pro Gly Thr Ile Leu Phe
 305 310 315 320
 Asn Asn Asn Tyr Cys Ile Arg Asp Gly Gly Ala Ile Cys Thr Gln Phe
 325 330 335
 Leu Thr Ile Lys Asn Ser Gly His Val Tyr Phe Thr Asn Asn Gln Gly
 340 345 350
 Asn Trp Gly Gly Ala Leu Met Leu Leu Gln Asp Ser Thr Cys Leu Leu
 355 360 365
 Phe Ala Glu Gln Gly Asn Ile Ala Phe Gln Asn Asn Glu Val Phe Leu
 370 375 380
 Thr Thr Phe Gly Arg Tyr Asn Ala Ile His Cys Thr Pro Asn Ser Asn

385 390 395 400
 Leu Gln Leu Gly Ala Asn Lys Gly Tyr Thr Thr Ala Phe Phe Asp Pro
 405 410 415
 Ile Glu His Gln His Pro Thr Thr Asn Pro Leu Ile Phe Asn Pro Asn
 420 425 430
 Ala Asn His Gln Gly Thr Ile Leu Phe Ser Ser Ala Tyr Ile Pro Glu
 435 440 445
 Ala Ser Asp Tyr Glu Asn Asn Phe Ile Ser Ser Ser Lys Asn Thr Ser
 450 455 460
 Glu Leu Arg Asn Gly Val Leu Ser Ile Glu Asp Arg Ala Gly Trp Gln
 465 470 475 480
 Phe Tyr Lys Phe Thr Gln Lys Gly Gly Ile Leu Lys Leu Gly His Ala
 485 490 495
 Ala Ser Ile Ala Thr Thr Ala Asn Ser Glu Thr Pro Ser Thr Ser Val
 500 505 510
 Gly Ser Gln Val Ile Ile Asn Asn Leu Ala Ile Asn Leu Pro Ser Ile
 515 520 525
 Leu Ala Lys Gly Lys Ala Pro Thr Leu Trp Ile Arg Pro Leu Gln Ser
 530 535 540
 Ser Ala Pro Phe Thr Glu Asp Asn Asn Pro Thr Ile Thr Leu Ser Gly
 545 550 555 560
 Pro Leu Thr Leu Leu Asn Glu Glu Asn Arg Asp Pro Tyr Asp Ser Ile
 565 570 575
 Asp Leu Ser Glu Pro Leu Gln Asn Ile His Leu Leu Ser Leu Ser Asp
 580 585 590
 Val Thr Ala Arg His Ile Asn Thr Asp Asn Phe His Pro Glu Ser Leu
 595 600 605
 Asn Ala Thr Glu His Tyr Gly Tyr Gln Gly Ile Trp Ser Pro Tyr Trp
 610 615 620
 Val Glu Thr Ile Thr Thr Thr Asn Asn Ala Ser Ile Glu Thr Ala Asn
 625 630 635 640
 Thr Leu Tyr Arg Ala Leu Tyr Ala Asn Trp Thr Pro Leu Gly Tyr Lys
 645 650 655
 Val Asn Pro Glu Tyr Gln Gly Asp Leu Ala Thr Thr Pro Leu Trp Gln
 660 665 670
 Ser Phe His Thr Met Phe Ser Leu Leu Arg Ser Tyr Asn Arg Thr Gly
 675 680 685
 Asp Ser Asp Ile Glu Arg Pro Phe Leu Glu Ile Gln Gly Ile Ala Asp
 690 695 700
 Gly Leu Phe Val His Gln Asn Ser Ile Pro Gly Ala Pro Gly Phe Arg
 705 710 715 720
 Ile Gln Ser Thr Gly Tyr Ser Leu Gln Ala Ser Ser Glu Thr Ser Leu
 725 730 735
 His Gln Lys Ile Ser Leu Gly Phe Ala Gln Phe Phe Thr Arg Thr Lys
 740 745 750
 Glu Ile Gly Ser Ser Asn Asn Val Ser Ala His Asn Thr Val Ser Ser
 755 760 765
 Leu Tyr Val Glu Leu Pro Trp Phe Gln Glu Ala Phe Ala Thr Ser Thr
 770 775 780
 Val Leu Ala Tyr Gly Tyr Gly Asp His His Leu His Ser Leu His Pro
 785 790 795 800
 Ser His Gln Glu Gln Ala Glu Gly Thr Cys Tyr Ser His Thr Leu Ala
 805 810 815
 Ala Ala Ile Gly Cys Ser Phe Pro Trp Gln Gln Lys Ser Tyr Leu His
 820 825 830
 Leu Ser Pro Phe Val Gln Ala Ile Ala Ile Arg Ser His Gln Thr Ala
 835 840 845
 Phe Glu Glu Ile Gly Asp Asn Pro Arg Lys Phe Val Ser Gln Lys Pro
 850 855 860
 Phe Tyr Asn Leu Thr Leu Pro Leu Gly Ile Gln Gly Lys Trp Gln Ser
 865 870 875 880
 Lys Phe His Val Pro Thr Glu Trp Thr Leu Glu Leu Ser Tyr Glu Pro
 885 890 895
 Val Leu Tyr Gln Gln Asn Pro Gln Ile Gly Val Thr Leu Leu Ala Ser

900 905 910
 Gly Gly Ser Trp Asp Ile Leu Gly His Asn Tyr Val Arg Asn Ala Leu
 915 920 925
 Gly Tyr Lys Val His Asn Gln Thr Ala Leu Phe Arg Ser Leu Asp Leu
 930 935 940
 Phe Leu Asp Tyr Gln Gly Ser Val Ser Ser Ser Thr Ser Thr His His
 945 950 955 960
 Leu Gln Ala Gly Ser Thr Leu Lys Phe
 965

<210>502

<211>100

<212>PRT

<213>Chlamydia pneumoniae

<400>502

Arg Cys Pro Val Ala Leu Asp Ala Ala Val Ser Ile Gly Gly Glu Gly
 1 5 10 15
 Ser Ser Pro Val Val Asp Gly Ile Val Asp Lys Val Glu Ser Pro Leu
 20 25 30
 Ile Leu Arg Asn Arg Glu Val Ser Ile Thr Gly Asn Arg Thr Pro Thr
 35 40 45
 Ser Phe Ser Ser Cys Thr Arg Ile Val Lys Thr Ser Ile Ala Glu Lys
 50 55 60
 Asn Lys Gly Ser Ser Ile Leu Arg Asp Cys Ala Gly Ser Leu Ala Ser
 65 70 75 80
 Asn Arg Ala Ser Ser Pro Asn Arg Glu Ile Phe Thr Glu Glu Gly Met
 85 90 95
 Val Phe Asn Ile
 100

<210>503

<211>275

<212>PRT

<213>Chlamydia pneumoniae

<400>503

Ile Tyr Lys Leu Leu Asp Asn Lys Leu Met Ile Phe Tyr Asp Lys Leu
 1 5 10 15
 Tyr Phe His Ile Lys Val Trp Met Phe Met Arg Pro Ile Cys Leu Ser
 20 25 30
 Ile Leu Ser Thr Ala Leu Cys Cys Ser Leu Ser Gly Asn Glu Val Pro
 35 40 45
 Asn Leu Ala Ser Cys Gln Met Ser Arg Lys Asp Ile Ser Ala Phe His
 50 55 60
 Thr Ser Pro Ser Phe Arg Leu Asn Val Thr Pro Glu Pro Leu Val Ser
 65 70 75 80
 Ser Phe Arg Pro Ser Asn Leu Leu Asn Gly Phe Gly His Asp Ile Thr
 85 90 95
 Gln Asp Ile Thr Ile Thr Gly Asn Ser Ile Asn Ser Val Ile Asp Tyr
 100 105 110
 Asn Tyr His Tyr Glu Asp Gly Gly Ile Leu Ala Cys Lys Asn Leu Phe
 115 120 125
 Ile Ser Glu Asn Lys Gly Asn Leu Ser Phe Glu Arg Asn Ser Ser His
 130 135 140
 Ser Ser Gly Gly Ala Leu Tyr Ser Val Arg Glu Cys Trp Ile Ser Lys
 145 150 155 160
 Asn Gln Asn Tyr Ser Phe Ile Ser Asn Ala Ala Ser Leu Ala Thr Thr
 165 170 175
 Thr Thr Ser Gly Phe Gly Gly Ala Ile His Ala Leu Asp Ser Tyr Ile
 180 185 190
 Thr Asn Asn Leu Gly Glu Gly Gln Phe Leu Asp Asn Val Ser Lys Asn
 195 200 205
 Arg Gly Gly Ala Ile Tyr Val Gly Val Ser Leu Ser Ile Thr Asp Asn
 210 215 220
 Leu Gly Pro Ile Val Ile Lys Lys Asn Gln Thr Leu Glu Asp Ser Ser
 225 230 235 240
 Phe Gly Gly Gly Ile Phe Cys Arg Ala Val Asn Ile Glu Arg Asn Tyr

245 250 255
 Gln Asn Ile Gln Ile Asn Asp Asn Ala Ser Gly Gln Gly Val Val Tyr
 260 265 270
 Phe Leu Pro
 275
 <210>504
 <211>354
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>504
 Cys Phe Arg Thr Arg Gly Gly Ile Phe Ser Ala Leu Gly Val Ile Ile
 1 5 10 15
 Ser Ser Asn Lys Glu Ile Ile Glu Ile Ser Asn His Ser Ala Ser Ser
 20 25 30
 Ile Asn Thr Ala Ser Gly Lys Leu Tyr Pro Gly Gly Gly Ile Met
 35 40 45
 Cys Thr Ser Leu Val Ile Glu Asn Asn Pro Lys Gly Leu Ile Phe Asn
 50 55 60
 Asn Lys Thr Ala Ala Leu Ser Gly Gly Ala Ile His Thr Arg Ser Phe
 65 70 75 80
 Ile Phe Gln Asn Asn Gly Pro Thr Ala Phe Ile Asn Asn Ser Ala Thr
 85 90 95
 Ser Gly Gly Ala Leu Ile Asn Leu Ser Gly Ile Gly Ser Thr Pro Gln
 100 105 110
 Asn Phe Phe Leu Ser Ala Asp Tyr Gly Asp Ile Leu Phe Asn Asn Asn
 115 120 125
 Thr Ile Thr Ser Ser Ser Pro Gln Pro Gly Tyr Arg Asn Ala Leu Tyr
 130 135 140
 Ala Ala Pro Gly Ile Asn Leu Lys Leu Gly Ala Arg Gln Gly Tyr Lys
 145 150 155 160
 Ile Leu Phe Tyr Asp Pro Ile Asp His Asp Gln Thr Thr Thr Asp Pro
 165 170 175
 Ile Val Phe Asn Tyr Glu Pro His His Leu Gly Thr Val Leu Phe Ser
 180 185 190
 Gly Ile Asn Val Asp Ser Asn Ala Thr Asn Pro Leu Asn Phe Leu Ser
 195 200 205
 Lys Phe Ser Asn Ser Ser Arg Leu Glu Arg Gly Val Leu Ala Ile Glu
 210 215 220
 Asp Arg Ala Ala Ile Ser Cys Lys Thr Leu Ser Gln Thr Gly Gly Ile
 225 230 235 240
 Leu Arg Leu Gly Asn Ala Ala Leu Ile Arg Thr Lys Gly Pro Gly Ser
 245 250 255
 Ser Ile Asn Phe Asn Ala Ile Ala Ile Asn Leu Pro Ser Ile Leu Gln
 260 265 270
 Ser Glu Ala Ser Ala Pro Lys Phe Trp Ile Tyr Pro Thr Leu Thr Gly
 275 280 285
 Ser Thr Tyr Ser Glu Asp Thr Ser Ser Thr Ile Thr Leu Ser Gly Pro
 290 295 300
 Leu Thr Phe Leu Asn Asp Glu Asn Glu Asn Pro Tyr Asp Ser Leu Asp
 305 310 315 320
 Leu Ser Glu Pro Arg Lys Asp Ile Pro Pro Pro Leu Pro Pro Arg Cys
 325 330 335
 Asp Cys Lys Lys Asn Arg Tyr Phe Glu Ser His Cys Arg Ser His Glu
 340 345 350
 Leu Arg

<210>505
 <211>392
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>505
 Ile Ser Leu Asn Leu Glu Arg Ile Ser Pro Leu Leu Tyr Leu Leu Asp
 1 5 10 15
 Val Thr Ala Lys Lys Ile Asp Thr Ser Asn Leu Ile Val Glu Ala Met

20 25 30
 Asn Leu Asp Glu His Tyr Gly Tyr Gln Gly Ile Trp Ser Pro Tyr Trp
 35 40 45
 Met Glu Thr Thr Thr Thr Thr Ser Ser Thr Val Pro Glu Gln Thr Asn
 50 55 60
 Thr Asn His Arg Gln Leu Tyr Val Asp Trp Thr Pro Val Gly Tyr Arg
 65 70 75 80
 Pro Asn Pro Glu Arg His Gly Glu Phe Ile Ala Asn Thr Leu Trp Gln
 85 90 95
 Ser Ala Tyr Asn Ala Leu Leu Gly Ile Arg Ile Leu Pro Pro Gln Asn
 100 105 110
 Leu Lys Glu His Asp Leu Glu Ala Ser Leu Gln Gly Leu Gly Leu Leu
 115 120 125
 Ile Asn Gln His Asn Arg Glu Gly Arg Lys Gly Phe Arg Asn His Thr
 130 135 140
 Thr Gly Tyr Ala Ala Thr Thr Ser Ala Lys Thr Ala Ala Arg His Ser
 145 150 155 160
 Phe Ser Leu Gly Phe Ala Gln Met Phe Ser Lys Thr Arg Glu Arg Gln
 165 170 175
 Ser Pro Ser Thr Thr Ser Ser His Asn Tyr Phe Ala Gly Leu Arg Phe
 180 185 190
 Asp Ser Leu Leu Phe Arg Asp Phe Ile Ser Thr Gly Leu Ser Leu Gly
 195 200 205
 Tyr Ser Tyr Gly Asp His His Met Leu Cys His Tyr Thr Glu Ile Leu
 210 215 220
 Lys Gly Ser Ser Lys Ala Phe Phe Asn Asn His Thr Leu Val Ala Ser
 225 230 235 240
 Leu Asp Cys Thr Phe Leu Pro Ala Arg Ile Thr Arg Thr Leu Glu Leu
 245 250 255
 Gln Pro Phe Ile Ser Ala Ile Ala Leu Arg Cys Ser Gln Ala Ser Phe
 260 265 270
 Gln Glu Thr Gly Asp His Ile Arg Lys Phe His Pro Lys His Pro Leu
 275 280 285
 Thr Asp Leu Ser Ser Pro Ile Gly Phe Arg Ser Glu Trp Lys Thr Ser
 290 295 300
 His His Ile Pro Met Leu Trp Thr Thr Glu Ile Ser Tyr Val Pro Thr
 305 310 315 320
 Leu Tyr Arg Lys Asn Pro Glu Met Phe Thr Thr Leu Leu Ile Ser Asn
 325 330 335
 Gly Thr Trp Thr Thr Gln Ala Thr Pro Val Ser Tyr Asn Ser Val Ala
 340 345 350
 Ala Lys Ile Lys Asn Thr Ser Gln Leu Phe Ser Arg Val Thr Leu Ser
 355 360 365
 Leu Asp Tyr Ser Ala Gln Val Ser Ser Ser Thr Val Gly Gln Tyr Leu
 370 375 380
 Lys Ala Glu Ser His Cys Thr Phe
 385 390

<210>506

<211>822

<212>PRT

<213>Chlamydia pneumoniae

<400>506

Thr Val Gln Asn Asn Arg Ser Leu Ser Lys Ser Ser Phe Phe Val Gly
 1 5 10 15
 Ala Leu Ile Leu Gly Lys Thr Thr Ile Leu Leu Asn Ala Thr Pro Leu
 20 25 30
 Ser Asp Tyr Phe Asp Asn Gln Ala Asn Gln Leu Thr Thr Leu Phe Pro
 35 40 45
 Leu Ile Asp Thr Leu Thr Asn Met Thr Pro Tyr Ser His Arg Ala Thr
 50 55 60
 Leu Phe Gly Val Arg Asp Thr Asn Gln Asp Ile Val Leu Asp His
 65 70 75 80
 Gln Asn Ser Ile Glu Ser Trp Phe Glu Asn Phe Ser Gln Asp Gly Gly
 85 90 95

Ala Leu Ser Cys Lys Ser Leu Ala Ile Thr Asn Thr Lys Asn Gln Ile
 100 105 110
 Leu Phe Leu Asn Ser Phe Ala Ile Lys Arg Ala Gly Ala Met Tyr Val
 115 120 125
 Asn Gly Asn Phe Asp Leu Ser Glu Asn His Gly Ser Ile Ile Phe Ser
 130 135 140
 Gly Asn Leu Ser Phe Pro Asn Ala Ser Asn Phe Ala Asp Thr Cys Thr
 145 150 155 160
 Gly Gly Ala Val Leu Cys Ser Lys Asn Val Thr Ile Ser Lys Asn Gln
 165 170 175
 Arg Thr Ala Tyr Phe Ile Asn Asn Lys Ala Lys Ser Ser Gly Gly Ala
 180 185 190
 Ile Gln Ala Ala Ile Ile Asn Ile Lys Asp Asn Thr Gly Pro Cys Leu
 195 200 205
 Phe Phe Asn Asn Ala Ala Gly Xaa Thr Ala Gly Gly Ala Leu Phe Ala
 210 215 220
 Asn Ala Cys Arg Ile Glu Asn Asn Ser Gln Pro Ile Tyr Phe Leu Asn
 225 230 235 240
 Asn Gln Ser Gly Leu Gly Gly Ala Ile Arg Val His Gln Glu Cys Ile
 245 250 255
 Leu Thr Lys Asn Thr Gly Ser Val Ile Phe Asn Asn Asn Phe Ala Met
 260 265 270
 Glu Ala Asp Ile Ser Ala Asn His Ser Ser Gly Gly Ala Ile Tyr Cys
 275 280 285
 Ile Ser Cys Ser Ile Lys Asp Asn Pro Gly Ile Ala Ala Phe Asp Asn
 290 295 300
 Asn Thr Ala Ala Arg Asp Gly Gly Ala Ile Cys Thr Gln Ser Leu Thr
 305 310 315 320
 Ile Gln Asp Ser Gly Pro Val Tyr Phe Thr Asn Asn Gln Gly Thr Trp
 325 330 335
 Gly Gly Ala Ile Met Leu Arg Gln Asp Gly Ala Cys Thr Leu Phe Ala
 340 345 350
 Asp Gln Gly Asp Ile Ile Phe Tyr Asn Asn Arg His Phe Lys Asp Thr
 355 360 365
 Phe Ser Asn His Val Ser Val Asn Cys Thr Arg Asn Val Ser Leu Thr
 370 375 380
 Val Gly Ala Ser Gln Gly His Ser Ala Thr Phe Tyr Asp Pro Ile Leu
 385 390 395 400
 Gln Arg Tyr Thr Ile Gln Asn Ser Ile Gln Lys Phe Asn Pro Asn Pro
 405 410 415
 Glu His Leu Gly Thr Ile Leu Phe Ser Ser Ala Tyr Ile Pro Asp Thr
 420 425 430
 Ser Thr Ser Arg Asp Asp Phe Ile Ser His Phe Arg Asn His Ile Gly
 435 440 445
 Leu Tyr Asn Gly Thr Leu Ala Leu Glu Asp Arg Ala Glu Trp Lys Val
 450 455 460
 Tyr Lys Phe Asp Gln Phe Gly Gly Thr Leu Arg Leu Gly Ser Arg Ala
 465 470 475 480
 Val Phe Ser Thr Thr Asp Glu Glu Gln Ser Ser Ser Val Gly Ser
 485 490 495
 Val Ile Asn Ile Asn Asn Leu Ala Ile Asn Leu Pro Ser Ile Leu Gly
 500 505 510
 Asn Arg Val Ala Pro Lys Leu Trp Ile Arg Pro Thr Gly Ser Ser Ala
 515 520 525
 Pro Tyr Ser Glu Asp Asn Asn Pro Ile Ile Asn Leu Ser Gly Pro Leu
 530 535 540
 Ser Leu Leu Asp Asp Glu Asn Leu Asp Pro Tyr Asp Thr Ala Asp Leu
 545 550 555 560
 Ala Gln Pro Ile Ala Glu Val Pro Leu Leu Tyr Leu Leu Asp Val Thr
 565 570 575
 Ala Lys His Ile Asn Thr Asp Asn Phe Tyr Pro Glu Gly Leu Asn Thr
 580 585 590
 Thr Gln His Tyr Gly Tyr Gln Gly Val Trp Ser Pro Tyr Trp Ile Glu
 595 600 605

Thr Ile Thr Thr Ser Asp Thr Ser Ser Glu Asp Thr Val Asn Thr Leu
 610 615 620
 His Arg Gln Leu Tyr Gly Asp Trp Thr Pro Thr Gly Tyr Lys Val Asn
 625 630 635 640
 Pro Glu Asn Lys Gly Asp Ile Ala Leu Ser Ala Phe Trp Gln Ser Phe
 645 650 655
 His Asn Leu Phe Ala Thr Leu Arg Tyr Gln Thr Gln Gln Gly Gln Ile
 660 665 670
 Ala Pro Thr Ala Ser Gly Glu Ala Thr Arg Leu Phe Val His Gln Asn
 675 680 685
 Ser Asn Asn Asp Ala Lys Gly Phe His Met Glu Ala Thr Gly Tyr Ser
 690 695 700
 Leu Gly Thr Thr Ser Asn Thr Ala Ser Asn His Ser Phe Gly Val Asn
 705 710 715 720
 Phe Ser Gln Leu Phe Ser Asn Leu Tyr Glu Ser His Ser Asp Asn Ser
 725 730 735
 Val Ala Ser His Thr Thr Thr Val Ala Leu Gln Ile Asn Asn Pro Trp
 740 745 750
 Leu Gln Glu Arg Phe Ser Thr Ser Ala Ser Leu Ala Tyr Ser Tyr Ser
 755 760 765
 Asn His His Ile Lys Ala Ser Gly Tyr Ser Gly Lys Ile Gln Thr Glu
 770 775 780
 Gly Lys Cys Tyr Ser Thr Thr Leu Arg Gly Gly Ser Leu Leu Leu Ser
 785 790 795 800
 Ile Ser Thr Met Ala Ile Thr Thr Ser Pro Leu His Ser Phe Tyr Pro
 805 810 815
 Ser Asn Cys Arg Ser Phe
 820

<210>507

<211>155

<212>PRT

<213>Chlamydia pneumoniae

<400>507

Gly Ala Ala Leu Ser Cys Ser Leu Ser Leu Gln Trp Arg Ser Arg Pro
 1 5 10 15
 Leu His Phe Thr Pro Phe Ile Gln Ala Ile Ala Val Arg Ser Asn Gln
 20 25 30
 Thr Ala Phe Gln Glu Ser Gly Asp Lys Ala Arg Lys Phe Ser Val His
 35 40 45
 Lys Pro Leu Tyr Asn Leu Thr Val Pro Leu Gly Ile Gln Ser Ala Trp
 50 55 60
 Glu Ser Lys Phe Arg Leu Pro Thr Tyr Trp Asn Ile Glu Leu Ala Tyr
 65 70 75 80
 Gln Pro Val Leu Tyr Gln Gln Asn Pro Glu Val Asn Val Ser Leu Glu
 85 90 95
 Ser Ser Gly Ser Ser Trp Leu Leu Ser Gly Thr Thr Leu Ala Arg Asn
 100 105 110
 Ala Ile Ala Phe Lys Gly Arg Asn Gln Ile Phe Ile Phe Pro Lys Leu
 115 120 125
 Ser Val Phe Leu Asp Tyr Gln Gly Ser Val Ser Ser Ser Thr Thr Thr
 130 135 140
 His Tyr Leu His Ala Gly Thr Thr Phe Lys Phe
 145 150 155

<210>508

<211>778

<212>PRT

<213>Chlamydia pneumoniae

<400>508

Glu Val Phe Met Ala Ser Gly Ile Gly Gly Ser Ser Gly Leu Gly Lys
 1 5 10 15
 Ile Pro Pro Lys Asp Asn Gly Asp Arg Ser Arg Ser Pro Ser Pro Lys
 20 25 30
 Gly Glu Leu Gly Ser His Glu Ile Ser Leu Pro Pro Gln Glu His Gly
 35 40 45

Glu Glu Gly Ala Ser Gly Ser Ser His Ile His Ser Ser Ser Ser Phe
 50 55 60
 Leu Pro Glu Asp Gln Glu Ser Gln Ser Ser Ser Ala Ala Ser Ser
 65 70 75 80
 Pro Gly Phe Phe Ser Arg Val Arg Ser Gly Val Asp Arg Ala Leu Lys
 85 90 95
 Ser Phe Gly Asn Phe Phe Ser Ala Glu Ser Thr Ser Gln Ala Arg Glu
 100 105 110
 Thr Arg Gln Ala Phe Val Arg Leu Ser Lys Thr Ile Thr Ala Asp Glu
 115 120 125
 Arg Arg Asp Val Asp Ser Ser Ser Ala Ala Ala Thr Glu Ala Arg Val
 130 135 140
 Ala Glu Asp Ala Ser Val Ser Gly Glu Asn Pro Ser Gln Gly Val Pro
 145 150 155 160
 Glu Thr Ser Ser Gly Pro Glu Pro Gln Arg Leu Phe Ser Leu Pro Ser
 165 170 175
 Val Lys Lys Gln Ser Gly Leu Gly Arg Leu Val Gln Thr Val Arg Asp
 180 185 190
 Arg Ile Val Leu Pro Ser Gly Ala Pro Pro Thr Asp Ser Glu Pro Leu
 195 200 205
 Ser Leu Tyr Glu Leu Asn Leu Arg Leu Ser Ser Leu Arg Gln Glu Leu
 210 215 220
 Ser Asp Ile Gln Ser Asn Asp Gln Leu Thr Pro Glu Glu Lys Ala Glu
 225 230 235 240
 Ala Thr Val Thr Ile Gln Gln Leu Ile Gln Ile Thr Glu Phe Gln Cys
 245 250 255
 Gly Tyr Met Glu Ala Thr Gln Ser Ser Val Ser Leu Ala Glu Ala Arg
 260 265 270
 Phe Lys Gly Val Glu Thr Ser Asp Glu Ile Asn Ser Leu Cys Ser Glu
 275 280 285
 Leu Thr Asp Pro Glu Leu Gln Glu Leu Met Ser Asp Gly Asp Ser Leu
 290 295 300
 Gln Asn Leu Leu Asp Glu Thr Ala Asp Asp Leu Glu Ala Ala Leu Ser
 305 310 315 320
 His Ala Arg Leu Ser Phe Ser Leu Asp Asp Asn Pro Thr Pro Ile Asp
 325 330 335
 Asn Asn Pro Thr Leu Ile Ser Gln Glu Glu Pro Ile Tyr Glu Glu Ile
 340 345 350
 Gly Gly Ala Ala Asp Pro Gln Arg Thr Arg Glu Asn Trp Ser Thr Arg
 355 360 365
 Leu Trp Asn Gln Ile Arg Glu Ala Leu Val Ser Leu Leu Gly Met Ile
 370 375 380
 Leu Ser Ile Leu Gly Ser Ile Leu His Arg Leu Arg Ile Ala Arg His
 385 390 395 400
 Ala Ala Ala Glu Ala Val Gly Arg Cys Cys Thr Cys Arg Gly Glu Glu
 405 410 415
 Cys Thr Ser Ser Glu Glu Asp Ser Met Ser Val Gly Ser Pro Ser Glu
 420 425 430
 Ile Asp Glu Thr Glu Arg Thr Gly Ser Pro His Asp Val Pro Arg Arg
 435 440 445
 Asn Gly Ser Pro Arg Glu Asp Ser Pro Leu Met Asn Ala Leu Val Gly
 450 455 460
 Trp Ala His Lys His Gly Ala Lys Thr Lys Glu Ser Ser Glu Ser Ser
 465 470 475 480
 Thr Pro Glu Ile Ser Ile Ser Ala Pro Ile Val Arg Gly Trp Ser Gln
 485 490 495
 Asp Ser Ser Val Ser Phe Ile Val Met Glu Asp Asp His Ile Phe Tyr
 500 505 510
 Asp Val Pro Arg Arg Lys Asp Gly Ile Tyr Asp Val Pro Ser Ser Pro
 515 520 525
 Arg Trp Ser Pro Ala Arg Glu Leu Glu Glu Asp Val Phe Gly Asp Tyr
 530 535 540
 Glu Val Pro Ile Thr Ser Ala Glu Pro Ser Lys Asp Lys Asn Ile Tyr
 545 550 555 560

Met Thr Pro Arg Leu Ala Thr Pro Ala Ile Tyr Asp Leu Pro Ser Arg
 565 570 575
 Pro Gly Ser Ser Gly Ser Ser Arg Ser Pro Ser Ser Asp Arg Val Arg
 580 585 590
 Ser Ser Ser Pro Asn Arg Arg Gly Val Pro Leu Pro Pro Val Pro Ser
 595 600 605
 Pro Ala Met Ser Glu Glu Gly Ser Ile Tyr Glu Asp Met Ser Gly Ala
 610 615 620
 Ser Gly Ala Gly Glu Ser Asp Tyr Glu Asp Met Ser Arg Ser Pro Ser
 625 630 635 640
 Pro Arg Gly Asp Leu Asp Glu Pro Ile Tyr Ala Asn Thr Pro Glu Asp
 645 650 655
 Asn Pro Phe Thr Gln Arg Asn Ile Asp Arg Ile Leu Gln Glu Arg Ser
 660 665 670
 Gly Gly Ala Ser Ala Ser Pro Val Glu Pro Ile Tyr Asp Glu Ile Pro
 675 680 685
 Trp Ile His Gly Arg Pro Pro Ala Thr Leu Pro Arg Pro Glu Asn Thr
 690 695 700
 Leu Thr Asn Val Ser Leu Arg Val Ser Pro Gly Phe Gly Pro Glu Val
 705 710 715 720
 Arg Ala Ala Leu Leu Ser Glu Ser Val Ser Ala Val Met Val Glu Ala
 725 730 735
 Glu Ser Ile Val Pro Pro Thr Glu Pro Gly Asp Gly Glu Ser Glu Tyr
 740 745 750
 Leu Glu Pro Leu Gly Gly Leu Val Ala Thr Thr Lys Ile Leu Leu Gln
 755 760 765
 Lys Gly Trp Pro Arg Gly Glu Ser Asn Ala
 770 775
 <210>509
 <211>511
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>509
 Gly Ser Ile Met Ala Val Gly Gly Val Gly Gly Ser Arg Ser Pro Ser
 1 5 10 15
 Pro Ile Pro Pro Asn Arg Arg Asn Ser Glu Asp Gly Lys Val Ser Pro
 20 25 30
 Lys Asp Asn Leu Gly Glu His Thr Val Ser Ser Ser Asp Ser Ser Leu
 35 40 45
 Ala Ser Gln Gly Pro Thr Ile Glu Glu Arg Lys Ala Gln Leu Gly Gly
 50 55 60
 Thr Asp Lys Ile Pro Leu Pro Ser Val Lys Glu Pro Gly Asp Ser Pro
 65 70 75 80
 Thr Ser Gly Arg Ser Gly Val Leu Gln Arg Ile Trp Lys Gly Val Lys
 85 90 95
 Gly Val Phe Lys Lys Thr Pro Gln Ala Arg Pro Glu Val Ser Ser Pro
 100 105 110
 Arg Leu Pro Ser His Val Gln His Gly Gln Arg Leu Pro Gly Leu Glu
 115 120 125
 Gly Phe Arg Asp Arg Ile Gln Lys Arg Ser Glu Asn Pro Glu Ala Asp
 130 135 140
 Leu Gly Lys Met Lys Arg Ser Tyr Ser Asp Gly Asp Leu Asp Arg Val
 145 150 155 160
 Gly His Asp Ser Asn Glu Asp Ser Thr Glu Asp Ser Arg Ser Glu Gly
 165 170 175
 Gly Glu Pro Ser Ser Lys Ser Ser Ser Phe Leu Ser Gly Val Arg Gly
 180 185 190
 Ala Val Ser Lys Val His Gly Ala Leu Gly Asp Ile Lys Gly Lys Phe
 195 200 205
 Gln Arg Ser Ala Ser Glu Asp Asp Leu Thr Thr Gln Gly Glu Asp Ser
 210 215 220
 Ala Gly Asp Thr Val Lys Glu Arg Arg Ser Glu Glu Ala Glu Ala Ser
 225 230 235 240
 Ser Lys Ser Ser Ser Phe Leu Ser Gly Val Arg Gly Ala Thr Ser Thr

245 250 255
 Val Gln Gly Ala Leu Gly Asp Ala Lys Glu Lys Val Ser Ala Phe Gly
 260 265 270
 Glu Gln Ala Ala Gly Ala Ile Arg Ser Ala Pro Gly Asn Ile Arg Thr
 275 280 285
 Arg Phe Gln Arg Ser Ser Ser Glu Gly Asp Leu Ser Asn Val Asn Lys
 290 295 300
 Ala Ala Lys His Leu Arg Lys Ala Leu Glu Asn Leu Glu Lys Val Ala
 305 310 315 320
 Pro Glu Gln Val Ser Pro Glu Val Ala Ser Arg Val Gln Ser Leu Leu
 325 330 335
 Ala Arg Met Glu Gln Leu Thr His Gln Glu Pro Pro Thr Val Glu Asp
 340 345 350
 Leu Ile Thr Phe Val Glu Ser Asn Val Gly Ser Asp Ser Val Glu Tyr
 355 360 365
 Ala Ser Ile Val Pro Gln Asp Gly Ser Gln Ala Pro Ala Glu Thr Ala
 370 375 380
 Glu Ala Pro Glu Thr Gly Gly Val Glu Gly Ser Ala Ala Gln Gly Ala
 385 390 395 400
 Trp Lys Ala Leu Arg Asp Phe Val Val Ser Ile Phe Gln Ala Val Ala
 405 410 415
 Ser Phe Phe Arg Ala Ile Ala Ser Arg Leu Ser Ser Ala Arg Arg Glu
 420 425 430
 Ser Ala Val Asp Asp Leu Ala Ser Glu Ser Asn Thr Gln Trp Phe Val
 435 440 445
 Glu Gln Glu Gly Val Ser Asn Pro Ser Ala Ala Pro Ser Leu Ser Phe
 450 455 460
 Ala Glu Glu Ile Ala Arg Arg Ala Ala Glu Met Ser Asn Arg Asn Ala
 465 470 475 480
 Gln Ser Leu Glu Lys Leu Glu Ser Gly Asn Val Thr Asp Pro Val Ile
 485 490 495
 Gln Gln Gly Leu Gly Leu Ala Arg Ser Phe Ala Pro Glu Gly Gln
 500 505 510

<210>510

<211>122

<212>PRT

<213>Chlamydia pneumoniae

<400>510

Met Thr Gly Ser Val Thr Leu Pro Asp Ser Asn Phe Ser Arg Leu Trp
 1 5 10 15
 Ala Phe Leu Leu Leu Ile Ser Ala Ala Leu Arg Ala Ile Ser Ser Ala
 20 25 30
 Lys Asp Lys Leu Gly Ala Ala Asp Gly Phe Glu Thr Pro Ser Cys Ser
 35 40 45
 Thr Asn His Cys Val Leu Leu Ser Asp Ala Arg Ser Ser Thr Ala Asp
 50 55 60
 Ser Arg Arg Ala Glu Leu Asn Leu Glu Ala Ile Ala Leu Lys Lys Leu
 65 70 75 80
 Ala Thr Ala Trp Asn Met Leu Thr Thr Lys Ser Arg Asn Ala Phe His
 85 90 95
 Ala Pro Cys Ala Ala Asp Pro Ser Thr Pro Pro Val Ser Gly Ala Ser
 100 105 110
 Ala Val Ser Ala Gly Ala Cys Asp Pro Ser
 115 120

<210>511

<211>598

<212>PRT

<213>Chlamydia pneumoniae

<400>511

Leu Lys Ile Ile Ile Ser Ile Ser Phe Met Ser Thr Ser Pro Ile Ser
 1 5 10 15
 Asn Asp Pro Arg Tyr Leu Ser Leu Ser Asn Ala Thr Glu Lys Thr Ser
 20 25 30
 Leu Leu Ala Asn Ser Arg Ser Leu Ser Pro Val Pro Asn Ser Leu Val

35 40 45
 Pro Ser Asn Pro Glu Asp Thr Gly Leu Arg Lys Ser Ile Phe Thr His
 50 55 60
 Ser Val Thr Leu Phe Ala Gly Leu Val Val Leu Val Ala Val Ser
 65 70 75 80
 Val Val Val Val Ala Leu Thr Val Leu Ala Pro Gly Val Pro Gln Ala
 85 90 95
 Ile Leu Leu Gly Ile Ala Ile Ser Gly Val Gly Ile Gly Gly Phe Ser
 100 105 110
 Ile Met Lys Ser Leu Val Tyr Met Val Arg Asp Tyr Met Ser Pro Arg
 115 120 125
 Met Gln Glu Ser Ser Arg Ile Lys Ser Ala Leu Ala Val Gly Thr Gly
 130 135 140
 Phe Thr Val Met Gly Leu Val Met Lys Val Gly Ala Asn Phe Val Pro
 145 150 155 160
 Gly Gly Tyr Gly Gly Leu Val Gly Ser Leu Gly Ser Ser Ala Tyr Ser
 165 170 175
 Arg Gly Ser Gln Thr Thr Leu Ala Ser Phe Ser His Tyr Ile Tyr Thr
 180 185 190
 Lys Phe Phe Arg Ser Glu Lys Val Ala Lys Gly Glu Lys Leu Thr Glu
 195 200 205
 Ala Glu Thr Ile Lys Glu Ala Lys Lys Leu His Tyr Ile Thr Leu Ser
 210 215 220
 Ile Ala Thr Ile Gly Val Gly Leu Ala Val Leu Gly Ile Leu Leu Ala
 225 230 235 240
 Ile Ala Gly Thr Val Leu Leu Gly Gly Ala Pro Ala Thr Ile Ala Ile
 245 250 255
 Ile Leu Ala Pro Pro Leu Ile Ser Ile Gly Leu Thr Thr Val Leu Gln
 260 265 270
 Thr Ile Leu His Ser Ser Ile Gly Lys Trp Arg Ala Phe Leu Leu Thr
 275 280 285
 Gln Glu Lys Lys Asp Leu Phe Val Asp Thr Ser Leu Lys Asp Ile Arg
 290 295 300
 Leu Glu Lys Leu Pro Pro Ser Glu Val Glu Glu Ser Glu Thr Ser Gln
 305 310 315 320
 Ser Val Ile Glu Val Pro Asp Ser Glu Gly Ile Ala Glu Thr Arg Ile
 325 330 335
 Ser Ala Glu Glu Ile Asp Thr Arg Leu Ser Leu Thr Thr Arg Gln Lys
 340 345 350
 Val Ile Phe Ala Leu Ala Thr Leu Leu Leu Leu Ala Ser Ile Ala Ala
 355 360 365
 Phe Ile Val Thr Gly Phe Gly Gly Leu Thr Val Met Gln Val Leu Leu
 370 375 380
 Val Ala Ser Val Gly Ser Ala Val Ala Ser Val Thr Leu Pro Met Val
 385 390 395 400
 Ser Ser Gly Phe Ser Tyr Val Ala Tyr Gln Leu Lys Ala Arg Leu Asn
 405 410 415
 Ile Ser Lys Leu Arg Trp Lys Glu Ala Lys Asn Lys Lys Arg Val Arg
 420 425 430
 Gln Phe Leu Ile Glu Ser Gly Val Ile Ala Ser Asp Arg Glu Phe Asn
 435 440 445
 Gln Met Trp Lys Thr Val Tyr Lys Lys Gln Ile Gln Lys Thr Asp Ala
 450 455 460
 Ala Ile Arg Glu Glu Val Arg Asn Phe Glu Lys Gly Gly Glu Val Asn
 465 470 475 480
 Ser Ala Leu Val Gly Gly Ile Leu Leu Gly Val Gly Thr Gly Ile Met
 485 490 495
 Leu Leu Ala Leu Val Pro Ala Phe Ala Pro Ile Val Pro Gly Ile Leu
 500 505 510
 Ala Leu Gly Gly Ser Thr Leu Gly Ile Ala Gly Ser Ile Leu Met Arg
 515 520 525
 Lys Phe Val Asn Trp Leu Tyr Asp Glu Leu Val Lys Leu Tyr Glu Arg
 530 535 540
 Arg Arg Asn Arg Arg Glu Leu Leu Tyr Gly Pro Glu Ser Lys Met Arg

PCT/IB98/01890

<210>512

<211>99

<212>PRT

<213>Chlamydia pneumoniae

<400>512

<210>513

<211>722

<212>PRT

<213>Chlamydia pneumoniae

<400>513

688

260 265 270
 Cys Lys Glu Met His Tyr Thr His Val Glu Leu Leu Pro Ile Thr Glu
 275 280 285
 His Pro Leu Asn Glu Ser Trp Gly Tyr Gln Val Thr Gly Tyr Tyr Ala
 290 295 300
 Pro Thr Ser Arg Tyr Gly Thr Leu Gln Glu Phe Gln Tyr Phe Val Asp
 305 310 315 320
 Tyr Leu His Lys Glu Asn Ile Gly Ile Ile Leu Asp Trp Val Pro Gly
 325 330 335
 His Phe Pro Val Asp Ala Phe Ala Leu Ala Ser Phe Asp Gly Glu Pro
 340 345 350
 Leu Tyr Glu Tyr Thr Gly His Ser Gln Ala Leu His Pro His Trp Asn
 355 360 365
 Thr Phe Thr Phe Asp Tyr Ser Arg His Glu Val Thr Asn Phe Leu Leu
 370 375 380
 Gly Ser Ala Leu Phe Trp Leu Asp Lys Met His Ile Asp Gly Leu Arg
 385 390 395 400
 Val Asp Ala Val Ala Ser Met Leu Tyr Arg Asp Tyr Gly Arg Glu Asp
 405 410 415
 Gly Glu Trp Thr Pro Asn Ile Tyr Gly Gly Lys Glu Asn Leu Glu Ser
 420 425 430
 Ile Glu Phe Leu Lys His Leu Asn Ser Val Ile His Lys Glu Phe Ser
 435 440 445
 Gly Val Leu Thr Phe Ala Glu Glu Ser Thr Ala Phe Pro Gly Val Thr
 450 455 460
 Lys Asp Val Asp Gln Gly Gly Leu Gly Phe Asp Tyr Lys Trp Asn Leu
 465 470 475 480
 Gly Trp Met His Asp Thr Phe His Tyr Phe Met Lys Asp Pro Met Tyr
 485 490 495
 Arg Lys Tyr His Gln Lys Asp Leu Thr Phe Ser Leu Trp Tyr Ala Phe
 500 505 510
 Gln Glu Ser Phe Ile Leu Pro Leu Ser His Asp Glu Val Val His Gly
 515 520 525
 Lys Gly Ser Leu Val Asn Lys Leu Pro Gly Asp Thr Trp Thr Arg Phe
 530 535 540
 Ala Gln Met Arg Val Leu Leu Ser Tyr Gln Ile Cys Leu Pro Gly Lys
 545 550 555 560
 Lys Leu Leu Phe Met Gly Gly Glu Phe Gly Gln Tyr Gly Glu Trp Ser
 565 570 575
 Pro Asp Arg Pro Leu Asp Trp Glu Leu Leu Asn His His Tyr His Lys
 580 585 590
 Thr Leu Arg Asn Cys Val Ser Ala Leu Asn Ala Leu Tyr Ile His Gln
 595 600 605
 Pro Tyr Leu Trp Met Gln Glu Ser Ser Gln Glu Cys Phe His Trp Val
 610 615 620
 Asp Phe His Asp Ile Glu Asn Asn Val Ile Ala Tyr Tyr Arg Phe Ala
 625 630 635 640
 Gly Ser Asn Arg Ser Ser Ala Leu Leu Cys Val His His Phe Ser Ala
 645 650 655
 Ser Thr Phe Pro Ser Tyr Val Leu Arg Cys Glu Gly Val Lys His Cys
 660 665 670
 Glu Leu Leu Asn Thr Asp Asp Glu Ser Phe Gly Gly Ser Gly Lys
 675 680 685
 Gly Asn Arg Ala Pro Val Val Cys Gln Asp Gln Gly Val Ala Trp Gly
 690 695 700
 Leu Asp Ile Glu Leu Pro Pro Leu Ala Thr Val Ile Tyr Leu Val Thr
 705 710 715 720
 Phe Phe

<210>514

<211>340

<212>PRT

<213>Chlamydia pneumoniae

<400>514

Gly Arg Gly Arg Arg Ala Asp Trp Gly Asp Cys Met Ile Asp Ile Met
 1 5 10 15
 Gln His Phe Lys Pro Tyr Thr Met Val Pro Gly Gln Lys Leu Pro Ile
 20 25 30
 Pro Gly Ser Leu Leu Tyr Ala Gln Val Phe Pro Thr Leu Trp Arg Leu
 35 40 45
 Phe Ser Ser Lys His Glu Ile Leu Asn Glu Gln Thr Leu Gln Val Gln
 50 55 60
 Gly Pro Leu Lys Arg Phe Ala Val Phe Gln Asp Leu His Arg Gly Gly
 65 70 75 80
 Leu Ala Val Thr Ser Glu Arg Tyr Lys Tyr Tyr Leu Leu Pro Ser Gly
 85 90 95
 Glu Cys Thr Gln Ser Ile Lys Gly Lys Leu Pro Ser Ala Ala Gln Ala
 100 105 110
 Gly Pro Leu Leu Ser Leu Gly Val His Lys His Ala Asp Trp Gln Lys
 115 120 125
 Val Arg Cys Arg Arg Asp Leu Lys Glu Ile Leu Pro Leu Trp Phe Arg
 130 135 140
 Phe Ala Ala Met Ala Pro Lys Gly Ser Tyr Arg Asp Leu Glu Thr Thr
 145 150 155 160
 Ala Ile Gly Ser Leu Val Lys Thr Ala His Gln Arg Val Leu His Arg
 165 170 175
 Glu Thr Thr Glu Ile Ala Pro Ala Leu Leu Ser Ile Ala Leu Ala Gly
 180 185 190
 Phe Ser Glu Cys Phe Leu Pro Arg Ser Tyr Asp Glu Glu Phe Gln Gly
 195 200 205
 Ile Leu Pro Gln Asp Gly Asp Pro Glu Gly Gly Val Pro Phe Glu Leu
 210 215 220
 Leu Ser Tyr Ser Phe Gly Met Ile Gln Asp Ile Phe Leu Arg His Gln
 225 230 235 240
 Gly Gln Leu Val Glu Ile Leu Pro Ala Leu Pro Pro Glu Phe Pro Cys
 245 250 255
 Gly Arg Leu Ile His Val Ala Leu Pro Asn Leu Gly Thr Leu Ser Ile
 260 265 270
 Val Trp Thr Lys Lys Thr Ile Arg Gln Val Glu Leu His Ala Glu Tyr
 275 280 285
 Ser Gly Glu Val Phe Leu Lys Phe Cys Ser Ser Leu Cys Ser Ala Arg
 290 295 300
 Leu Arg Glu Trp Ser Glu Arg Arg Leu Ser Gly Ser Lys Arg Leu Ser
 305 310 315 320
 Leu Gly Glu Thr Leu Glu Ile Lys Ala Gly Thr Thr Tyr Leu Trp Asp
 325 330 335
 Cys Phe His Lys
 340

<210>515

<211>423

<212>PRT

<213>Chlamydia pneumoniae

<400>515

Arg Tyr Met Thr Val Ala Glu Val Lys Gly Thr Phe Lys Leu Val Cys
 1 5 10 15
 Leu Gly Cys Arg Val Asn Gln Tyr Glu Val Gln Ala Tyr Arg Asp Gln
 20 25 30
 Leu Thr Ile Leu Gly Tyr Gln Glu Val Leu Asp Ser Glu Ile Pro Ala
 35 40 45
 Asp Leu Cys Ile Ile Asn Thr Cys Ala Val Thr Ala Ser Ala Glu Ser
 50 55 60
 Ser Gly Arg His Ala Val Arg Gln Leu Cys Arg Gln Asn Pro Thr Ala
 65 70 75 80
 His Ile Val Val Thr Gly Cys Leu Gly Glu Ser Asp Lys Glu Phe Phe
 85 90 95
 Ala Ser Leu Asp Arg Gln Cys Thr Leu Val Ser Asn Lys Glu Lys Ser
 100 105 110
 Arg Leu Ile Glu Lys Ile Phe Ser Tyr Asp Thr Thr Phe Pro Glu Phe

115 120 125
 Lys Ile His Ser Phe Glu Gly Lys Ser Arg Ala Phe Ile Lys Val Gln
 130 135 140
 Asp Gly Cys Asn Ser Phe Cys Ser Tyr Cys Ile Ile Pro Tyr Leu Arg
 145 150 155 160
 Gly Arg Ser Val Ser Arg Pro Ala Glu Lys Ile Leu Ala Glu Ile Ala
 165 170 175
 Gly Val Val Asp Gln Gly Tyr Arg Glu Val Val Ile Ala Gly Ile Asn
 180 185 190
 Val Gly Asp Tyr Cys Asp Gly Glu Arg Ser Leu Ala Ser Leu Ile Glu
 195 200 205
 Gln Val Asp Gln Ile Pro Gly Ile Glu Arg Ile Arg Ile Ser Ser Ile
 210 215 220
 Asp Pro Asp Asp Ile Thr Glu Asp Leu His Arg Ala Ile Thr Ser Ser
 225 230 235 240
 Arg His Thr Cys Pro Ser Ser His Leu Val Leu Gln Ser Gly Ser Asn
 245 250 255
 Ser Ile Leu Lys Arg Met Asn Arg Lys Tyr Ser Arg Gly Asp Phe Leu
 260 265 270
 Asp Cys Val Glu Lys Phe Arg Ala Ser Asp Pro Arg Tyr Ala Phe Thr
 275 280 285
 Thr Asp Val Ile Val Gly Phe Pro Gly Glu Ser Asp Gln Asp Phe Glu
 290 295 300
 Asp Thr Leu Arg Ile Ile Glu Asp Val Gly Phe Ile Lys Val His Ser
 305 310 315 320
 Phe Pro Phe Ser Ala Arg Arg Arg Thr Lys Ala Tyr Thr Phe Asp Asn
 325 330 335
 Gln Ile Pro Asn Gln Val Ile Tyr Glu Arg Lys Lys Tyr Leu Ala Glu
 340 345 350
 Val Ala Lys Arg Val Gly Gln Lys Glu Met Met Lys Arg Leu Gly Glu
 355 360 365
 Thr Thr Glu Val Leu Val Glu Lys Val Thr Gly Gln Val Ala Thr Gly
 370 375 380
 His Ser Pro Tyr Phe Glu Lys Val Ser Phe Pro Val Val Gly Thr Val
 385 390 395 400
 Ala Ile Asn Thr Leu Val Ser Val Arg Leu Asp Arg Val Glu Glu Glu
 405 410 415
 Gly Leu Ile Gly Glu Ile Val
 420

<210>516

<211>472

<212>PRT

<213>Chlamydia pneumoniae

<400>516

Leu Asp Thr Ile Asp Thr Pro Gly Glu Gln Gly Ser Gln Ser Phe Gly
 1 5 10 15
 Asn Ser Leu Gly Ala Arg Phe Asp Leu Pro Arg Lys Glu Gln Asp Pro
 20 25 30
 Ser Gln Ala Leu Ala Val Ala Ser Tyr Gln Asn Lys Thr Asp Ser Gln
 35 40 45
 Val Val Glu Glu His Leu Asp Glu Leu Ile Ser Leu Ala Asp Ser Cys
 50 55 60
 Gly Ile Ser Val Leu Glu Thr Arg Ser Trp Ile Leu Lys Thr Pro Ser
 65 70 75 80
 Ala Ser Thr Tyr Ile Asn Val Gly Lys Leu Glu Glu Ile Glu Glu Ile
 85 90 95
 Leu Lys Glu Phe Pro Ser Ile Gly Thr Leu Ile Ile Asp Glu Glu Ile
 100 105 110
 Thr Pro Ser Gln Gln Arg Asn Leu Glu Lys Arg Leu Gly Leu Val Val
 115 120 125
 Leu Asp Arg Thr Glu Leu Ile Leu Glu Ile Phe Ser Ser Arg Ala Leu
 130 135 140
 Thr Ala Glu Ala Asn Ile Gln Val Gln Leu Ala Gln Ala Arg Tyr Leu
 145 150 155 160

Leu Pro Arg Leu Lys Arg Leu Trp Gly His Leu Ser Arg Gln Lys Ser
 165 170 175
 Gly Gly Gly Ser Gly Gly Phe Val Lys Gly Glu Gly Glu Lys Gln Ile
 180 185 190
 Glu Leu Asp Arg Arg Met Val Arg Glu Arg Ile His Lys Leu Ser Ala
 195 200 205
 Gln Leu Lys Ala Val Ile Lys Gln Arg Ala Glu Arg Arg Lys Val Lys
 210 215 220
 Ser Arg Arg Gly Ile Pro Thr Phe Ala Leu Ile Gly Tyr Thr Asn Ser
 225 230 235 240
 Gly Lys Ser Thr Leu Leu Asn Leu Leu Thr Ala Ala Asp Thr Tyr Val
 245 250 255
 Glu Asp Lys Leu Phe Ala Thr Leu Asp Pro Lys Thr Arg Lys Cys Val
 260 265 270
 Leu Pro Gly Gly Arg His Val Leu Thr Asp Thr Val Gly Phe Ile
 275 280 285
 Arg Lys Leu Pro His Thr Leu Val Ala Ala Phe Lys Ser Thr Leu Glu
 290 295 300
 Ala Ala Phe His Glu Asp Val Leu Leu His Val Val Asp Ala Ser His
 305 310 315 320
 Pro Leu Ala Leu Glu His Val Gln Thr Thr Tyr Asp Leu Phe Gln Glu
 325 330 335
 Leu Lys Ile Glu Lys Pro Arg Ile Ile Thr Val Leu Asn Lys Val Asp
 340 345 350
 Arg Leu Pro Gln Gly Ser Ile Pro Met Lys Leu Arg Leu Leu Ser Pro
 355 360 365
 Leu Pro Val Leu Ile Ser Ala Lys Thr Gly Glu Gly Ile Gln Asn Leu
 370 375 380
 Leu Ser Leu Met Thr Glu Ile Ile Gln Glu Lys Ser Leu His Val Thr
 385 390 395 400
 Leu Asn Phe Pro Tyr Thr Glu Tyr Gly Lys Phe Thr Glu Leu Cys Asp
 405 410 415
 Ala Gly Val Val Ala Ser Ser Arg Tyr Gln Glu Asp Phe Leu Val Val
 420 425 430
 Glu Ala Tyr Leu Pro Lys Glu Leu Gln Lys Lys Phe Arg Pro Phe Ile
 435 440 445
 Ser Tyr Val Phe Pro Glu Asp Cys Gly Asp Asp Glu Gly Arg Gly Pro
 450 455 460
 Val Leu Glu Ser Ser Phe Gly Asp
 465 470
 <210>517
 <211>273
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>517
 Ala Ile Gly Met Val Arg Asp Ile Gln Ser Glu Ser Ile Gly Lys Leu
 1 5 10 15
 Val Phe Leu Gly Thr Gly Asn Pro Glu Gly Ile Pro Val Pro Phe Cys
 20 25 30
 Ser Cys Arg Val Cys Gln Asn Thr Gly Ile His Arg Leu Arg Ser Ser
 35 40 45
 Val Leu Ile Gln Tyr Gln Asn Lys Thr Leu Val Ile Asp Ala Gly Pro
 50 55 60
 Asp Phe Arg Thr Gln Met Leu Val Ala Gly Val Ser Glu Leu Asp Gly
 65 70 75 80
 Val Phe Leu Thr His Pro His Tyr Asp His Ile Gly Gly Ile Asp Asp
 85 90 95
 Leu Arg Ala Trp Tyr Ile Val Thr Gln Arg Ser Leu Pro Leu Val Leu
 100 105 110
 Ser Ala Ser Thr Tyr Arg Phe Leu Asn Lys Ala Lys Glu Tyr Leu Phe
 115 120 125
 Ala Thr Pro Asn Val Glu Ser Ser Leu Pro Ala Val Leu Glu Phe Thr
 130 135 140
 Ile Leu Asn Glu Asp Cys Gly Gln Glu Glu Phe Gln Gly Ile Pro Tyr

145 150 155 160
 Thr Tyr Val Ser Tyr Tyr Gln Lys Ser Cys His Val Thr Gly Phe Arg
 165 170 175
 Phe Gly Asn Leu Ala Tyr Leu Thr Asp Leu Cys Ser Tyr Asp Ala Lys
 180 185 190
 Ile Phe Ser Tyr Leu Asp Asn Val Glu Thr Leu Ile Leu Ser Ala Gly
 195 200 205
 Pro Ser Glu Thr Pro Ile Pro Phe Gln Gly His Lys Ser Ser His Leu
 210 215 220
 Thr Val Glu Glu Ala Lys Ala Phe Ala Asn His Ala Gly Ile Lys Asn
 225 230 235 240
 Leu Ile Ile Thr His Ile Ser His Cys Leu Glu Ala Glu Arg Asp Gln
 245 250 255
 His Pro Glu Val Thr Phe Ala Tyr Asp Gly Met Glu Val Leu Trp Thr
 260 265 270
 Leu

<210>518

<211>242

<212>PRT

<213>Chlamydia pneumoniae

<400>518

Ser Asp Xaa Xaa Ile Ser Trp Gly Ile Ser Gly Arg Leu Gly Glu Phe
 1 5 10 15
 Val Ser Lys Lys Glu Gln Asp Cys Met Leu Gly Ser Leu Pro Cys Tyr
 20 25 30
 Pro Gly Ala Gly Asn Ile Glu Glu Tyr Lys Asn Arg Tyr Phe Tyr Cys
 35 40 45
 Gln Leu Cys Ala Glu Val Val Ser Pro Tyr Val Val Pro Val Ile Val
 50 55 60
 Val Asp Val Gln Gly Ala Pro Pro Thr Gly Ile Leu Gln Val Leu Arg
 65 70 75 80
 Cys Lys Gln His Lys Phe Gln Gly Leu Pro Val His Gly Pro Ile Thr
 85 90 95
 Ser Leu Trp Ala Leu Glu Pro Val Gly Lys Gly Ala Pro Gln Leu Glu
 100 105 110
 Ser Ala Met Tyr Glu Leu Cys Ser Gln Val Arg Asn Phe Asp Ile Cys
 115 120 125
 Ser Ile Val Ser Trp Val Phe Gly Gly Leu Cys Ile Phe Ala Gly Leu
 130 135 140
 Ile Val Gly Val Met Val Glu Ala Pro Leu Ile Ala Gly Leu Ser Ala
 145 150 155 160
 Trp Val Ile Pro Cys Ile Ile Gly Gly Val Gly Ala Ile Leu Cys Leu
 165 170 175
 Phe Ala Ile Leu Met Ala Tyr Leu Gly Arg Gly Arg Val Arg Glu Trp
 180 185 190
 Leu Asn Leu Ser His Glu Tyr Ile Thr Gln Cys His Cys Arg Gln Ile
 195 200 205
 Gln Ala His Ser Gln Asn Tyr Ser Val Ile Thr Glu Tyr Pro Ala Thr
 210 215 220
 Cys Ala Leu Ser Gln Pro Ile Thr Lys Leu Pro Asn Gly Ser Arg Arg
 225 230 235 240
 Asp Asn

<210>519

<211>545

<212>PRT

<213>Chlamydia pneumoniae

<400>519

Ser Cys Leu Arg Ile Glu Gly Ile Leu Met Ala Thr Ser Val Pro Val
 1 5 10 15
 Thr Ser Ser Thr Ser Val Gly Glu Ala Asn Ser Ser Asn Glu Arg Phe
 20 25 30
 Thr Glu Arg Thr Ser Arg Met Tyr Tyr Ala Ala Leu Val Leu Gly Ala

35 40 45
 Leu Ser Cys Leu Ile Phe Ile Ala Met Ile Val Ile Phe Pro Gln Val
 50 55 60
 Gly Leu Trp Ala Val Val Leu Gly Phe Ala Leu Gly Cys Leu Leu Leu
 65 70 75 80
 Ser Leu Ala Ile Val Phe Ala Val Ser Gly Leu Val Leu Gly Lys Thr
 85 90 95
 Leu Glu Pro Ser Arg Glu Ala Thr Pro Pro Glu Ile Val Ala Gln Lys
 100 105 110
 Glu Trp Thr Thr Gln Gln Asp Val Leu Gly Asn Glu Tyr Trp Arg Ser
 115 120 125
 Glu Leu Ile Ser Leu Phe Leu Arg Gly Asp Leu His Glu Ser Leu Ile
 130 135 140
 Val Asp Ser Lys Asp Arg Ser Leu Asp Ile Asp Gln Ser Leu Gln Asn
 145 150 155 160
 Ile Leu Lys Leu Glu Pro Leu Ser Thr Thr Leu Ser Leu Leu Lys Lys
 165 170 175
 Asp Cys Val His Ile Asn Ile Ile Leu His Leu Val Arg Gln Trp Asn
 180 185 190
 Leu Leu Gly Val Asp Leu Ser Pro Glu Val Thr Ala His Ala Glu Glu
 195 200 205
 Leu Leu Leu Phe Leu Ile Glu Glu Gln Tyr Tyr Ser Pro Asp Ile Leu
 210 215 220
 Lys Leu Ile Arg Tyr Gly Asp Ala Leu Gln Ala Thr Ser Pro Leu Met
 225 230 235 240
 Asp Trp Ala Asp Ser Gly Ser Phe Ser Val Asp Ala Asp Gly Val Phe
 245 250 255
 Ser Cys Arg Arg Glu Glu Cys Ser Pro Glu Asp Ala Leu Ala Gln Phe
 260 265 270
 Asp Leu Leu Leu Ala Leu Glu Asn Pro Asp Arg Arg Phe Leu Lys Asp
 275 280 285
 Ser Phe Leu Thr Tyr Ile Trp Ser Ser Ser Phe Phe Glu Lys Phe Leu
 290 295 300
 His Arg His Leu Glu Ser Leu Gln Arg Lys Leu Pro Glu Thr Ala Ile
 305 310 315 320
 Asp Val Ala Arg Tyr Glu Ala Gln Ile Gln Thr Phe Leu Ser Arg Tyr
 325 330 335
 Phe Gln Lys Leu Asp Leu Ile Asn Ala Met Ser Leu Asp Trp Gly Tyr
 340 345 350
 Asn Cys Ala Glu Gly Glu Lys Cys Tyr Glu Ser Ala Asn Gln Arg Leu
 355 360 365
 Asp Asn Leu Phe Ile Ala Phe Ser Ser Ser Val Pro Ala Met Lys Arg
 370 375 380
 Leu Phe Asp Lys Tyr Gly Ser Val Val Arg Val Asp Arg Arg Gln Ile
 385 390 395 400
 Arg Glu Gln Ile Leu Ser Asn Thr Glu Ile Leu Glu Asn Glu Ser Gly
 405 410 415
 Phe Leu Cys Ser Leu Tyr Glu Tyr Pro Leu Ser Tyr Leu Ile Asp Trp
 420 425 430
 Ala Val Leu Leu Asp Cys Val Arg Gly Thr Glu Ile Ser Leu Glu Asp
 435 440 445
 Gln Ala Asp Tyr Thr Val Cys Leu Gln Gly Leu Asp Ser Met Leu Ser
 450 455 460
 Gln Phe Ala Ser Arg Leu Gln Ser Gly Gln Lys Val Leu Asn Pro Arg
 465 470 475 480
 Asp Val Leu Ser Glu Gln Ala Ala Val Met Leu Val His Gly Leu Ala
 485 490 495
 Ala Gln Gly Val Ser Phe Gln Gly Leu Lys Ala Leu Met Tyr Leu Thr
 500 505 510
 Ala Val Pro Gln Arg Met Trp Leu Gly Ala Leu Pro Leu Phe Glu Ser
 515 520 525
 Phe Pro Val Phe Asn Arg Met Xaa Glu Phe Leu Gly Glu Ser Leu Gly
 530 535 540
 Asp

545

<210>520

<211>237

<212>PRT

<213>Chlamydia pneumoniae

<400>520

Met Ile Lys Gln Ile Gly Arg Phe Phe Arg Ala Phe Ile Phe Ile Met
 1 5 10 15
 Pro Leu Ser Leu Thr Ser Cys Glu Ser Lys Ile Asp Arg Asn Arg Ile
 20 25 30
 Trp Ile Val Gly Thr Asn Ala Thr Tyr Pro Pro Phe Glu Tyr Val Asp
 35 40 45
 Ala Gln Gly Glu Val Val Gly Phe Asp Ile Asp Leu Ala Lys Ala Ile
 50 55 60
 Ser Glu Lys Leu Gly Lys Gln Leu Glu Val Arg Glu Phe Ala Phe Asp
 65 70 75 80
 Ala Leu Ile Leu Asn Leu Lys Lys His Arg Ile Asp Ala Ile Leu Ala
 85 90 95
 Gly Met Ser Ile Thr Pro Ser Arg Gln Lys Glu Ile Ala Leu Leu Pro
 100 105 110
 Tyr Tyr Gly Asp Glu Val Gln Glu Leu Met Val Val Ser Lys Arg Ser
 115 120 125
 Leu Glu Thr Pro Val Leu Pro Leu Thr Gln His Ser Ser Val Ala Val
 130 135 140
 Gln Thr Gly Thr Phe Gln Glu His Tyr Leu Leu Ser Gln Pro Gly Ile
 145 150 155 160
 Cys Val Arg Ser Phe Asp Ser Thr Leu Glu Val Ile Met Glu Val Arg
 165 170 175
 Tyr Gly Lys Ser Pro Val Ala Val Leu Glu Pro Ser Val Gly Arg Val
 180 185 190
 Val Leu Lys Asp Phe Pro Asn Leu Val Ala Thr Arg Leu Glu Leu Pro
 195 200 205
 Pro Glu Lys Trp Val Leu Gly Cys Gly Leu Gly Val Leu Lys Ile Val
 210 215 220
 Leu Lys Lys Tyr Lys Arg Phe Asn Lys Arg Leu Gln Ile
 225 230 235

<210>521

<211>369

<212>PRT

<213>Chlamydia pneumoniae

<400>521

Lys Leu Pro Asn Asn Arg Leu Arg Met Val Lys Thr Lys Asn Pro Met
 1 5 10 15
 Phe Pro Ser Arg Ala Arg Arg Pro Gln Arg Thr His Pro Arg Leu Pro
 20 25 30
 Pro Lys Leu Leu His Gln Arg Ala Gln Lys Ser Leu Lys Gln Pro Ala
 35 40 45
 Asp Lys Lys Pro Thr Pro Pro Glu Ala Pro Pro Pro Val Arg
 50 55 60
 Val Ala Thr Pro Met Pro Leu Arg Pro Ser Ser Gln Gly Tyr Trp Gln
 65 70 75 80
 Cys Leu Asn Arg Met Val Ser Met Val Leu Arg Arg Ala Pro Leu Pro
 85 90 95
 Leu Pro Ala Met Gln Val Asp Pro Ile Leu Gly Asp Phe Asn Pro His
 100 105 110
 Phe Val Ala Ser Tyr Pro Asn Arg Ile Asn Asn Glu Pro Met Tyr Phe
 115 120 125
 Gln Ile Lys Gln Phe Lys Lys Ile Ala Gln Asn Pro Asp Leu Pro Gln
 130 135 140
 Gln His Arg Arg Leu Ala Gln Leu Ser Leu Glu Gln Ala Leu Tyr Leu
 145 150 155 160
 Asn Asp Asn Tyr Tyr Leu Val Asn Val Pro Gly Asp Gly Asn Cys Phe
 165 170 175
 Tyr Arg Ala Tyr Ala Val Gly Trp Leu Ser Ala Leu Tyr Glu Glu Ser

180 185 190
 Ser Arg Asn Asp Ile Val Phe Glu Gln Glu Ala Thr Arg Leu Leu Asp
 195 200 205
 Leu Pro Phe Ala Ser Ser Ser Pro Ala Asn Ala Asn Leu Cys Ala Glu
 210 215 220
 Met Ala Glu Leu Leu Gln Leu Cys Ser Thr Tyr Cys Ser Phe Ile Asp
 225 230 235 240
 Leu Tyr Asp Gly Val Ile Leu Ser Gln Lys His Thr Ala Thr Leu Ile
 245 250 255
 Ala Phe Leu Arg Lys Leu Ser Ala Tyr Ala Ile Arg Gln Gln Ile Ala
 260 265 270
 Ala Ser Ser Asn Glu Glu Thr Ala Arg Ala Leu Phe Ile Ser Asp Met
 275 280 285
 Gln Asp Asp Leu Leu Pro Ser Val Leu Glu Phe Leu Ala Ala Asn Arg
 290 295 300
 Pro Tyr Ser Glu Leu Phe Gln Asn Leu Ile Asp His Ser Ala His Pro
 305 310 315 320
 Thr Cys Asn Leu Glu Thr Asn Ser Phe Phe Ser Trp Asn Ile Cys Pro
 325 330 335
 Leu Ser Phe Leu Leu Met Gln Ser Phe Lys Arg Cys Leu Gln Lys Ile
 340 345 350
 Asn Asn Phe Glu Ser Asn Met Lys Glu Lys Tyr Glu Arg Leu Leu Leu
 355 360 365
 Ser

<210>522

<211>637

<212>PRT

<213>Chlamydia pneumoniae

<400>522

Ser Phe Arg Thr Pro Tyr Met Gln Ser Arg Asp Lys Leu Phe Leu Leu
 1 5 10 15
 Leu Glu His Leu Pro Ala Leu Phe Leu Thr Asp Ala Glu Leu Gln Lys
 20 25 30
 Met Ser Pro Glu Asp Gln Gln Leu Arg Lys Gln Tyr Glu Arg Glu Ile
 35 40 45
 Arg Glu Ala Phe Ala Lys Leu Ser Arg Arg Ile Ala Asp Ser Gly Trp
 50 55 60
 Asp Thr Glu Arg Phe Asn Ala Ile Val Lys Asp His Leu Pro Glu Ala
 65 70 75 80
 Ile Arg Cys Gln Tyr Ser Arg Phe Leu Ala Thr Ile Glu Asn Arg Arg
 85 90 95
 Ser Gly Asp Leu Pro Trp Ser Pro Ala Leu Ser Phe Phe Ala Phe Leu
 100 105 110
 Cys Thr Cys Pro Ser Val Arg Phe His Lys Leu Cys Ala Thr Phe Tyr
 115 120 125
 Lys Ser Leu Glu Asp Ile Ile Ala Ser Ala Pro Pro Gln Arg Ser
 130 135 140
 Ile Gln Glu Ile Leu Xaa Ile Ser Asn Ala Ser Leu Ser Tyr Leu Asn
 145 150 155 160
 Glu Asp Leu Asp Ser Ser Trp Gln Arg Glu Val Ile Ser Ser Asn Ile
 165 170 175
 Met Thr Ile Leu Thr Thr His Glu Ser Leu Thr Leu Glu Ser Ser Met
 180 185 190
 Pro Gln Leu Glu Thr Leu His Lys Arg Ile Ala Asn Leu Leu Lys Asn
 195 200 205
 Val Ile Ser Thr Ser Phe Glu Thr Pro Pro Leu Ser Asn Gln Pro Asp
 210 215 220
 Leu Leu Ser Asn Leu Val Asn Lys Leu Leu Val Ala Ile His Ser Lys
 225 230 235 240
 Leu Glu Leu Lys Glu His Phe Asn Thr Val Cys Ser Ala Arg Ser Leu
 245 250 255
 Arg Leu Thr Arg Asp Glu Gly Ser Gly Leu Ser Gln Glu Gln Asp Leu
 260 265 270

Leu Tyr Thr Gln Ala Val Gln Leu Leu Phe Phe Ile Leu Gln His Pro
 275 280 285
 Gln Val Asn Asn Arg Pro Glu Thr Lys Asp Ala Val Lys Glu Leu Lys
 290 295 300
 Met Leu Leu Leu Pro Phe Leu Gln Tyr Ala Phe Lys Lys Val Glu Asn
 305 310 315 320
 Glu Lys Lys Leu Gln Lys Leu Leu Arg Ser Ile Leu Gly Ser Leu Val
 325 330 335
 Leu Lys Pro Pro Ala Arg Tyr Pro Ser Thr Pro Ser Asn Lys Asp Lys
 340 345 350
 Glu Thr Phe Cys Lys Phe Trp Ser Arg His Pro Glu Val Met Val Leu
 355 360 365
 Asp Pro Ile Leu Glu Lys Asn Cys Met Gln Phe Leu Arg Ala Thr Phe
 370 375 380
 Pro Asn Tyr Gln Leu Glu Thr Glu Ala Ile Leu Leu Glu Lys Glu Ile
 385 390 395 400
 Glu Ser Thr Phe Arg Asn Gly Trp Asn Val Phe Leu Thr Arg Leu Asn
 405 410 415
 Leu Phe Gly Ser Lys Leu Gly Ser Pro Ser Ser Pro Thr Ala Leu Ser
 420 425 430
 Asp Gln Phe Ser Lys Ser Phe Leu Ile Phe Cys Phe Leu Asn Asn Tyr
 435 440 445
 Pro Lys Leu Leu Gln Lys Lys Thr Pro Leu Ala Ala Arg Leu Asp Ala
 450 455 460
 Phe Gln Arg Glu Ala Ser His Arg Phe Thr Gln Val Lys Asp Lys Leu
 465 470 475 480
 Leu Leu Ser Leu Lys Tyr Gly Phe Pro Leu Ala Thr Ala Thr Ile Asn
 485 490 495
 Gln Tyr Ser Arg Ala Arg Asp Gln Leu Ile Cys Asn Leu Leu Lys Asn
 500 505 510
 Thr Val Thr Ala Ser Asp Gly Phe Cys Arg Ser Gly Phe Arg Gln Ser
 515 520 525
 Leu Ile Gly Tyr Leu His Ser Leu Ser Ser Asn Glu Leu Gly Asp Ile
 530 535 540
 Leu Asp Asp Val Lys Glu Gln Ala Glu Ala Asn Asp Val Ala Ala Met
 545 550 555 560
 Thr Thr Val Pro Leu Gln Pro Phe Ala Val Cys Leu Ile Met Ser Asp
 565 570 575
 Arg Asp Thr Val Ser Glu Glu Asn Ile Glu Asn Phe Val Ala Met His
 580 585 590
 Gly Phe Leu Asn Thr Ile Ser Pro Glu Arg Asp Ala Arg Ile Phe Leu
 595 600 605
 Ile Arg Phe Pro Asn His Tyr Gly Cys Leu Leu Pro Arg Asn Pro Arg
 610 615 620
 Thr Glu Asp Gln Asn Ser Lys Pro Asp Ser Ser Asn Pro
 625 630 635

<210>523

<211>298

<212>PRT

<213>Chlamydia pneumoniae

<400>523

Arg Ser Glu Leu Lys Thr Gly Gln Leu Lys Ser Leu Val Leu His Glu
 1 5 10 15
 Val Leu Ile Leu Thr Phe Thr Tyr Pro Leu Pro Arg Thr Leu Lys Gln
 20 25 30
 His Pro Asp Glu Val His Thr Val Pro Ile Ser Pro Asn Leu Ser Phe
 35 40 45
 Gly Glu Gly Ser Pro Ile Leu Ile Ala Gly Pro Cys Thr Leu Glu Ser
 50 55 60
 Tyr Glu His Thr Val Ser Ala Leu Thr Val Lys Glu Ala Gly Ala
 65 70 75 80
 Gln Val Phe Arg Gly Ser Ile Arg Lys Pro Arg Thr Ser Pro Phe Ser
 85 90 95
 Phe Gln Gly Trp Glu Lys Glu Cys Val Leu Trp His Lys Glu Ala Gln

100 105 110
 Ser Ile His Gly Leu Pro Thr Glu Thr Glu Val Leu Asp Val Arg Asp
 115 120 125
 Val Glu Ile Thr Ala Glu His Val Asp Ile Leu Arg Ile Gly Ala Lys
 130 135 140
 Asn Met His Asn Thr Pro Leu Leu Gln Glu Val Ser Lys Ser His Arg
 145 150 155 160
 Pro Ile Ile Leu Lys Arg Ser Pro Ala Ala Thr Leu Glu Glu Trp Leu
 165 170 175
 Cys Ala Ala Glu Tyr Ile Leu Ala Ser Ser Pro Ser Cys Pro Gly Val
 180 185 190
 Ile Leu Cys Glu Arg Gly Ile Arg Thr Phe Glu His Ser Thr Arg Tyr
 195 200 205
 Thr Leu Asp Leu Asn Thr Val Ala Leu Leu Lys Glu Ile Ser Ser Leu
 210 215 220
 Pro Val Ile Val Asp Pro Ser His Ala Ala Gly Lys Arg Ser Leu Val
 225 230 235 240
 Leu Pro Leu Ala Ser Ala Gly Leu Ser Val Gly Ala Asp Gly Leu Met
 245 250 255
 Ile Glu Val His Ala His Pro Glu Lys Ala Leu Cys Asp Ala Lys Gln
 260 265 270
 Gln Ile Thr Pro Glu Glu Leu His Leu Phe Ala Lys Lys His Phe Cys
 275 280 285
 Pro Ser Glu Ser Arg Ala His Ala Ile Ser
 290 295

<210>524

<211>465

<212>PRT

<213>Chlamydia pneumoniae

<400>524

Ala Gln His Arg Ser Leu Leu Lys Gly Asn Ile Xaa His Leu Gly Cys
 1 5 10 15
 Gly Val Leu Tyr Phe Met Asn Phe Ser Leu Phe Leu Phe Phe Leu Ile
 20 25 30
 Ala Ile Gln Gly Ile Cys Leu Tyr Val Gly Arg Arg Gly Ser Lys Lys
 35 40 45
 Val Glu Asp Arg Glu Ser Tyr Phe Leu Ala Gly Arg Ser Leu Lys Ile
 50 55 60
 Phe Pro Leu Met Met Thr Phe Ile Ala Thr Gln Ile Gly Gly Gly Val
 65 70 75 80
 Leu Leu Gly Ala Ala Glu Glu Ala Phe Cys Tyr Gly Tyr Gly Gly Ile
 85 90 95
 Leu Tyr Pro Leu Gly Val Ala Leu Gly Leu Ile Phe Leu Gly Met Gly
 100 105 110
 Pro Gly Lys Arg Leu Ala Glu Gly Ser Leu Thr Thr Val Val Ser Ile
 115 120 125
 Phe Glu Val Phe Tyr Gly Ser Lys Lys Leu Arg Lys Ile Ala Phe Leu
 130 135 140
 Leu Ser Ala Gly Ser Leu Phe Phe Ile Leu Val Ala Gln Val Ile Ala
 145 150 155 160
 Leu Asp Arg Leu Phe Ser Ser Phe Pro Phe Gly Lys Tyr Val Thr Val
 165 170 175
 Ala Phe Trp Ile Val Leu Ala Ser Tyr Thr Ser Thr Gly Gly Phe Arg
 180 185 190
 Gly Val Val Arg Thr Asp Val Ile Gln Ala Gly Phe Leu Leu Ile Ala
 195 200 205
 Val Leu Val Cys Gly Val Ser Val Trp Leu Ser Val Pro Lys Ser Leu
 210 215 220
 Ser Val Leu Asp Pro Phe Gln Ser Leu Pro Cys Ala Lys Phe Ser Asn
 225 230 235 240
 Trp Ile Phe Met Pro Met Leu Phe Met Leu Val Glu Gln Asp Met Val
 245 250 255
 Gln Arg Cys Val Ala Ala Ser Ser Pro Lys Arg Leu Gln Trp Ala Ala
 260 265 270

WO 99/27105

Val Gly Ala Gly Leu Val Leu Leu Phe Asn Phe Ile Pro Leu Phe
 275 280 285
 Leu Gly Ser Leu Gly Ala Lys Ala Gly Leu Lys Ala Gly Cys Pro Leu
 290 295 300
 Ile Asp Thr Ile Ala Tyr Phe Cys Asn Pro Ser Leu Ala Ala Val Met
 305 310 315 320
 Ala Ala Ala Ile Gly Val Ala Ile Leu Ser Thr Ala Asp Ser Leu Met
 325 330 335
 Asn Ala Val Ser Gln Leu Ile Ala Glu Glu Tyr Pro Thr Leu Lys Ala
 340 345 350
 Pro Tyr Tyr Arg Tyr Leu Val Leu Gly Leu Ala Val Ala Pro Leu
 355 360 365
 Val Ala Ile Gly Phe Thr Asn Ile Val Asp Val Leu Ile Leu Ser Tyr
 370 375 380
 Ser Leu Ser Val Cys Cys Leu Ser Val Pro Val Gly Phe Tyr Leu Leu
 385 390 395 400
 Ala Pro Lys Gly Arg Arg Val Ser Gly Ala Ala Ala Trp Ala Gly Val
 405 410 415
 Leu Val Gly Ala Leu Gly Tyr Gly Trp Val Gln Ile Val Ser Leu Gly
 420 425 430
 Met Phe Gly Glu Leu Leu Ala Trp Val Gly Ser Leu Val Ala Phe Ser
 435 440 445
 Phe Val Gly Phe Ile Glu Ile Thr Trp Lys Asn Lys Val Lys Thr Gln
 450 455 460

Thr
 465

<210>525

<211>237

<212>PRT

<213>Chlamydia pneumoniae

<400>525

Gly Leu Arg Ser Pro Gln Pro Leu Val Cys Glu Ala Ala Ser Ala Ala
 1 5 10 15
 Leu Cys Ser Leu Gly Ile His Gly Val Pro Leu Ala Lys Glu His Leu
 20 25 30
 Glu Ser Leu Ser Ser Arg Lys Ala Ala Ala Asn Leu Ser Ile Leu Leu
 35 40 45
 Leu Val Ser Arg Glu Asp Ile Glu Arg Ala Gly Asp Val Ile Ala Arg
 50 55 60
 Tyr Leu Ser Asn Pro Glu Met Cys Trp Ala Ile Glu Tyr Phe Leu Trp
 65 70 75 80
 Asp Ala Gln Trp Asn Leu Arg Gly Asp Thr Phe Pro Leu Tyr Ser Asp
 85 90 95
 Met Ile Lys Arg Glu Ile Gly Arg Lys Leu Ile Arg Leu Leu Ala Val
 100 105 110
 Ala Arg Tyr Ser Gln Ala Lys Ala Val Thr Ala Thr Phe Leu Ser Gly
 115 120 125
 Gln Gln Ala Gln Gly Trp Ser Phe Phe Ser Gly Met Phe Trp Glu Glu
 130 135 140
 Gly Asp Val Lys Thr Ser Glu Asp Leu Val Thr Asp Ala Cys Phe Ala
 145 150 155 160
 Ala Lys Leu Glu Gly Ala Leu Ala Ser Leu Cys Gln Lys Lys Asp Gln
 165 170 175
 Ala Ser Leu Gln Arg Val Ser Gln Leu Tyr Asn Asp Ser Arg Trp Gln
 180 185 190
 Asp Lys Leu Ala Ile Leu Glu Ser Val Ala Phe Ser Glu Asn Leu Asp
 195 200 205
 Ala Val Pro Phe Leu Leu Asp Cys Cys His His Glu Ala Pro Ser Leu
 210 215 220
 Arg Ser Ala Ala Ala Gly Ala Leu Phe Ser Ile Phe Lys
 225 230 235
 <210>526
 <211>356
 <212>PRT

WO 99/27105

PCT/IB98/01890

<213>Chlamydia pneumoniae

<400>526

Arg Arg Thr Gly Gly Ile Ser Leu Thr Tyr Ser Ser Phe Arg Trp Ala
 1 5 10 15
 Ser Phe Arg Cys Tyr Ser Leu Ile Phe Phe Cys Phe Cys Gly Ser Leu
 20 25 30
 Phe Gly Ser Glu Ser Leu Arg Tyr Gln Leu Leu Ile Gln Asp Phe Ala
 35 40 45
 Lys Val Ser Glu Glu Gly Ile Gly Leu Leu Glu Ser Lys Glu Tyr Ser
 50 55 60
 Leu Leu Gln Ala Lys Leu Val Leu Arg Ala Leu Ala Gln Asn Ser Ser
 65 70 75 80
 Phe Asp Asp Trp Phe Arg Ser Phe Lys Lys Cys Gln Ile Ser Tyr Pro
 85 90 95
 Glu Leu Ala His Asp Arg Asp Val Leu Glu Glu Phe Gly Ile Gln Val
 100 105 110
 Leu Arg Glu Gly Ile Glu Asn Pro Ser Val Thr Val Arg Ala Val Ser
 115 120 125
 Val Leu Ala Ile Gly Leu Ala Arg Asp Phe Arg Leu Val Pro Leu Leu
 130 135 140
 Leu Gln Ser Cys Asn Asp Ser Ala Ile Val Arg Ser Leu Ala Leu
 145 150 155 160
 Gln Val Ala Val Asn Tyr Gly Ser Glu Ser Leu Lys Lys Ala Ile Val
 165 170 175
 Glu Leu Ala Arg Asn Asp Asp Ser Ile His Val Arg Ile Thr Ala Tyr
 180 185 190
 Gln Val Val Ala Leu Leu Gln Ile Glu Glu Leu Leu Pro Phe Leu Arg
 195 200 205
 Glu Arg Ala Glu Asn Lys Leu Val Asp Ser Val Glu Arg Arg Glu Ala
 210 215 220
 Trp Lys Ala Cys Leu Glu Leu Ser Ser Gln Phe Leu Glu Thr Gly Val
 225 230 235 240
 Ala Lys Asp Asp Ile Asp Gln Ala Leu Phe Thr Cys Glu Val Leu Arg
 245 250 255
 Asn Gly Met Leu Pro Glu Thr Thr Glu Ile Phe Thr Glu Leu Leu Ser
 260 265 270
 Val Glu His Pro Glu Val Gln Glu Ser Leu Leu Leu Ser Ala Leu Ala
 275 280 285
 Trp Ser His Gln Leu Gln Asn His Lys Glu Phe Leu Ser Lys Val Arg
 290 295 300
 His Val Met Cys Thr Ser Pro Phe Ala Lys Val Arg Phe Gln Ala Ala
 305 310 315 320
 Ala Leu Leu His Leu His Gly Asp Pro Leu Gly Arg Asp Ser Leu Val
 325 330 335
 Glu Gly Cys Ala Leu Leu Asn Leu Leu Cys Val Arg Gln Leu Arg Arg
 340 345 350
 Leu Ser Ala Leu
 355

<210>527

<211>110

<212>PRT

<213>Chlamydia pneumoniae

<400>527

Met Thr Val Phe Lys Gln Ile Ile Asp Gly Leu Ile Asp Cys Glu Lys
 1 5 10 15
 Val Phe Glu Asn Glu Asn Phe Ile Ala Ile Lys Asp Arg Phe Pro Gln
 20 25 30
 Ala Pro Val His Leu Leu Ile Ile Pro Lys Lys Pro Ile Pro Arg Phe
 35 40 45
 Gln Asp Ile Pro Gly Asp Glu Met Ile Leu Met Ala Glu Ala Gly Lys
 50 55 60
 Ile Val Gln Glu Leu Ala Ala Glu Phe Gly Ile Ala Asp Gly Tyr Arg
 65 70 75 80
 Val Val Ile Asn Asn Gly Ala Glu Gly Gly Gln Ala Val Phe His Leu

85 90 95
 His Ile His Leu Leu Gly Gly Arg Pro Leu Gly Ala Ile Ala
 100 105 110
 <210>528
 <211>130
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>528
 Asn His Leu Ile Pro Trp Asp Ile Leu Lys Ser Trp Tyr Arg Phe Phe
 1 5 10 15
 Arg Asn Asp Lys Lys Met Asn Arg Ser Leu Arg Lys Thr Ile Phe Tyr
 20 25 30
 Ser Tyr Glu Ile Phe Val Phe Lys Tyr Leu Phe Thr Ile Tyr Gln Ser
 35 40 45
 Ile Asp Asn Leu Phe Glu Tyr Cys His Met Ile Pro Arg Ser Cys Asn
 50 55 60
 Val Asn Arg Lys Ala Arg Trp Gln Leu Ser Leu Phe Val His Thr Glu
 65 70 75 80
 Arg Lys Arg Pro Leu Trp Gln Asn Thr Ala Pro Gly Ile Pro Asp Thr
 85 90 95
 Leu Asp Asn Ser Leu Pro Asn Lys Pro Ala Gln Phe Ser Gly Lys Gly
 100 105 110
 Thr Arg Thr Ser Ile Arg Arg Ser Lys Phe Gly Gly Ile Pro Arg Lys
 115 120 125
 Ile His
 130
 <210>529
 <211>300
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>529
 Met Glu Asp Trp Leu Arg Arg Ile Val Gly Met Gln Ile Pro Arg Ser
 1 5 10 15
 Ile Gly Thr His Asp Gly Ser Phe His Ala Asp Glu Val Thr Ala Cys
 20 25 30
 Ala Leu Leu Ile Ile Phe Asp Leu Val Asp Glu Asn Lys Ile Ile Arg
 35 40 45
 Ser Arg Asp Pro Val Val Leu Ser Lys Cys Glu Tyr Val Cys Asp Val
 50 55 60
 Gly Gly Val Tyr Ser Ile Glu Asn Lys Arg Phe Asp His His Gln Val
 65 70 75 80
 Ser Tyr Asp Gly Ser Trp Ser Ser Ala Gly Met Ile Leu His Tyr Leu
 85 90 95
 Lys Glu Phe Gly Tyr Met Asp Cys Glu Glu Tyr His Phe Leu Asn Asn
 100 105 110
 Thr Leu Val His Gly Val Asp Glu Gln Asp Asn Gly Arg Phe Phe Ser
 115 120 125
 Lys Glu Gly Phe Cys Ser Phe Ser Asp Ile Ile Lys Ile Tyr Asn Pro
 130 135 140
 Arg Glu Glu Glu Glu Thr Asn Ser Asp Ala Asp Phe Ser Cys Ala Leu
 145 150 155 160
 His Phe Thr Ile Asp Phe Leu Cys Arg Leu Arg Lys Lys Phe Gln Tyr
 165 170 175
 Asp Arg Val Cys Arg Gly Ile Val Arg Glu Ala Met Glu Thr Glu Asp
 180 185 190
 Met Cys Leu Tyr Phe Asp Arg Pro Leu Ala Trp Gln Glu Asn Phe Phe
 195 200 205
 Phe Leu Gly Gly Glu Lys His Pro Ala Ala Phe Val Cys Phe Pro Ser
 210 215 220
 Cys Asp Gln Trp Ile Leu Arg Gly Ile Pro Pro Asn Leu Asp Arg Arg
 225 230 235 240
 Met Glu Val Arg Val Pro Phe Pro Glu Asn Trp Ala Gly Leu Leu Gly
 245 250 255
 Lys Glu Leu Ser Lys Val Ser Gly Ile Pro Gly Ala Val Phe Cys His

260 265 270
 Lys Gly Leu Phe Leu Ser Val Trp Thr Asn Arg Glu Ser Cys Gln Arg
 275 280 285
 Ala Leu Arg Leu Thr Leu Gln Asp Arg Gly Ile Ile
 290 295 300
 <210>530
 <211>154
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>530
 Ile Met Tyr Asn Leu Leu His Ala His His Asp Ala Ala Ser Pro Asp
 1 5 10 15
 Gly Arg Leu Val Ser His Leu Lys Lys Leu Ser Pro His Ile Tyr Glu
 20 25 30
 Gly Glu Val Leu Ile Glu Asn Ile Pro Ala Tyr Phe Leu Gly Phe His
 35 40 45
 Leu Pro Gln Gln Cys Ile Gln Val Asn Leu Lys Ser Ser Leu Ala Gln
 50 55 60
 Leu Gly Val Glu Ala Val Leu Asn His Leu Glu Leu Asn Lys Ala Arg
 65 70 75 80
 Lys Glu Ala Arg Leu His Val Leu Phe Met Ser Gln Asp Pro Ile Ala
 85 90 95
 Thr Ala Asn Val Gly Ala Pro Arg Ser Leu Xaa Val Leu Ser Ala Ser
 100 105 110
 Ser Leu Leu Leu Met Ile Ala Asp Ser Tyr Val Arg Leu Val Ile Ser
 115 120 125
 Thr Gly Cys Leu Arg Thr Gln Thr Val Gln Asp Leu Arg Ser Tyr Ala
 130 135 140
 Leu Gly Lys Asn Leu Ser Thr Ser Ser Leu
 145 150
 <210>531
 <211>230
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>531
 Glu Pro Gly Ser Phe Val Cys Lys Leu Phe Ala Ala Asp Asp Arg Arg
 1 5 10 15
 Leu Val Arg Ser Pro Cys Tyr Leu Asn Arg Met Phe Thr His Thr Asp
 20 25 30
 Arg Thr Gly Ser Pro Leu Leu Arg Phe Gly Lys Lys Leu Glu His Phe
 35 40 45
 Ile Thr Leu Glu Ile Ile Asn Asp Arg Leu Val Val Phe Leu Pro Ile
 50 55 60
 Leu Pro Gly Thr Ile Cys Tyr Glu Glu Thr Ile Tyr Gly Phe Leu Pro
 65 70 75 80
 Leu Met Ser Lys Ser Leu Thr Arg Pro His Leu Lys Ile Arg Lys Phe
 85 90 95
 Leu Pro Leu Tyr Gln Met Val Thr Asp Arg Pro Pro Val Pro Glu Asp
 100 105 110
 His Lys Ile Leu Leu Ile Lys Thr Glu Pro Leu His Ile Arg Thr Val
 115 120 125
 Phe Ala Arg Val Val Gln Asp Leu Leu Pro Gln Gly Leu Arg His Thr
 130 135 140
 Ala Ala Asp Ile Leu Glu Pro Thr Thr Gln Glu Ser Gly Asp Ile Tyr
 145 150 155 160
 Glu Phe Tyr Gly Ser Thr Ser Glu Pro Ile Glu Arg Ile Pro Leu Glu
 165 170 175
 Phe Phe Thr Leu Glu Pro Tyr Lys Glu His Ser Phe Phe Phe Tyr Arg
 180 185 190
 Asp Met Leu Gln Glu Thr Leu Xaa Ser Pro Gln Glu Val Phe Arg Val
 195 200 205
 Phe Glu Ser Ile Pro Glu Gly Glu Asn Gln Ala Ala Met Phe Ile Ser
 210 215 220
 Lys Gly Ser Glu Leu Ala

225
 <210>532
 <211>356
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>532
 Ala Cys Leu Ser Ser Pro Lys Thr Leu Gly Ser Ser Asn Leu Glu Ser
 1 5 10 15
 Pro His Gln Met Lys Asp Met Leu Gly Lys Phe Lys Ser Thr Leu Lys
 20 25 30
 Thr Gln Pro Cys Phe Pro Phe Leu Lys Ala Met Glu Thr Asp His Ile
 35 40 45
 Thr Ser Gln Gly Val Leu Phe Ser Arg Tyr Phe Pro Ser Ala Ser Leu
 50 55 60
 Lys Gly Met Phe Leu Ser Asn Tyr Ser Arg Tyr Tyr Leu Gln His Ile
 65 70 75 80
 Tyr Phe Gln Ile Pro Ser Pro Thr Ser Gly Glu Phe Phe Ser Asn Arg
 85 90 95
 Asp Arg Ser Phe Leu Leu Asp Leu Tyr Phe Ala Gly Ile Ser Val Phe
 100 105 110
 Trp Ala Asp Leu Glu Ser Lys Arg Leu Leu Gln Tyr Ile Lys Arg Arg
 115 120 125
 Asn Lys Asp Val Gly Met Phe Val Pro Lys His Gln Ala Glu Gln Phe
 130 135 140
 Ala Gln Ser Tyr Phe Ile Gly Ile His Gly Ser Cys Leu Ile Ala Gly
 145 150 155 160
 Asp Tyr Asp Glu Phe Leu Arg Glu Leu Leu Thr Gly Met His Thr Leu
 165 170 175
 Ser Gln Gln Phe Thr Ile Pro Glu Phe Pro Pro Gln Thr Pro Leu Ala
 180 185 190
 Ile Leu Thr Gly Gly Gly Ser Gly Ala Met Glu Leu Ala Asn Arg Val
 195 200 205
 Ala Thr Glu Leu Ser Ile Leu Ser Cys Gly Asn Leu Ile Ser Leu Asp
 210 215 220
 Thr Thr Asn Ala Tyr Val Glu Ala Lys Met Ser Tyr Ala Ile Pro Asp
 225 230 235 240
 Leu Leu Glu Arg Gln Ala Asp Phe His Val Asp Leu Ala Val Phe Val
 245 250 255
 Ile Gly Gly Met Gly Thr Asp Phe Glu Leu Leu Glu Leu Ile Ser
 260 265 270
 Leu Lys Thr Gly Lys Lys Ala Leu Val Pro Val Phe Leu Ile Gly Pro
 275 280 285
 Val Asp Tyr Trp Lys Ser Lys Ile Thr Ala Leu Tyr Asn Ser Asn His
 290 295 300
 Ala Val Gly Thr Ile Arg Gly Ser Glu Trp Val His Asn Cys Leu Phe
 305 310 315 320
 Cys Leu Ser Ser Ala Lys Ala Gly Ile Ala Ile Phe Arg Arg Tyr Leu
 325 330 335
 Asn His Thr Leu Pro Ile Gly Pro Glu His Pro Val Pro Glu Asp Gly
 340 345 350
 Phe Val Ile Val
 355

<210>533
 <211>420
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>533
 Ile Leu Ser Ser Leu Tyr Thr Val Phe Thr Met Lys Thr Ala Phe His
 1 5 10 15
 Ser Cys Tyr Ser Trp Phe Cys Trp Leu Phe Ser Phe Leu Val Leu Phe
 20 25 30
 Val Gly Gly Ile Ala Gly Gly Glu Pro Leu Cys Pro Asp Cys Lys Tyr
 35 40 45
 Glu Thr Lys Ser Val Leu Arg Ser Asp Gln Leu Pro Asp His Leu Trp

50 55 60
 Asn Tyr Glu Asn Asp Cys Tyr Leu Thr Gly Tyr Val Gln Ser Leu Leu
 65 70 75 80
 Asp Met His Phe Leu Asp Ser Arg Thr Gln Val Val Ile Glu Lys Asn
 85 90 95
 Arg Ala Tyr Leu Phe Ser Leu Pro Val Asp Ser Ser Leu Ser Glu Ala
 100 105 110
 Ile Thr Asn Phe Val Arg Asp Leu Pro Phe Ile Cys Ala Val Glu Ile
 115 120 125
 Cys Glu Arg Pro Tyr Gly Glu Cys Ile Thr Arg Ser Ser Ala Glu Arg
 130 135 140
 Pro Leu Leu Pro Lys Glu Lys Thr Leu Gly Met Pro Ile Phe Cys Gly
 145 150 155 160
 Lys Glu Gly Val Trp Leu Pro Gln Asn Thr Ile Leu Phe Ser Pro Leu
 165 170 175
 Ile Ala Asp Pro Arg Gln Val Thr Asn Ser Ala Gly Ile Arg Phe Asn
 180 185 190
 Glu Lys Val Val Gly Asn Arg Val Gly Ala Thr Ile Phe Gly Gly Asp
 195 200 205
 Phe Ile Leu Leu Arg Leu Phe Asp Val Ser Arg Phe His Val Asp Cys
 210 215 220
 Asp Phe Gly Ile Gln Gly Gly Val Phe Ser Val Phe Asp Leu Asp His
 225 230 235 240
 Pro Glu Ser Cys Met Val Asn Ser Asp Phe Phe Val Ala Gly Leu Trp
 245 250 255
 Ser Gly Ala Ile Asp Lys Trp Ser Phe Arg Phe Arg Leu Trp His Leu
 260 265 270
 Ser Ser His Leu Gly Asp Glu Phe Ile Leu Thr His Pro Asn Phe Pro
 275 280 285
 Arg Phe Asn Leu Ser Asp Glu Gly Val Asp Leu Phe Ile Ser Phe Arg
 290 295 300
 Tyr Thr Pro Gln Ile Arg Leu Tyr Gly Gly Cys Gly Tyr Ile Val Ser
 305 310 315 320
 Arg Asp Leu Thr Phe Pro Glu Arg Pro Phe Tyr Cys Glu Trp Gly Ala
 325 330 335
 Glu Leu Arg Pro Phe Gly Leu Arg Glu Gly Asn Leu His Ala Gln Pro
 340 345 350
 Ile Phe Ala Met His Phe Arg Cys Trp Glu Glu Gln Lys Phe Gly Leu
 355 360 365
 Asp Gln Ser Tyr Ile Leu Gly Met Glu Trp Ala Lys Phe Gln Glu Ile
 370 375 380
 Gly Arg Lys Ile Arg Ala Val Leu Glu Tyr His Gln Gly Phe Ser Lys
 385 390 395 400
 Glu Gly Gln Phe Ile Arg Glu Pro Cys Asn Tyr Tyr Gly Phe Arg Leu
 405 410 415
 Thr Tyr Gly Phe
 420

<210>534

<211>96

<212>PRT

<213>Chlamydia pneumoniae

<400>534

Ser Lys Thr Glu Gly Ser His Ser Lys Thr Ser Lys Gly Phe Val Gly
 1 5 10 15
 Arg Phe Val Gln Trp Ile Arg Thr Phe Thr Gly Arg Gly Ser Lys Lys
 20 25 30
 Arg Ser Pro Ser Ser Phe Ser Pro Thr His Pro Tyr Ile Arg Leu Arg
 35 40 45
 Thr Tyr Thr Arg Ser Pro Lys Gln Ser Gly Val Glu Arg Lys Gln Glu
 50 55 60
 Asp Ala Glu Thr Ser Phe Ile Glu Thr Pro Lys Gly Ile Leu Lys Lys
 65 70 75 80
 Pro Gly Asn Lys Asp Pro Lys Gly Lys His Val His Trp Lys Asp Ser
 85 90 95

<210>535

<211>421

<212>PRT

<213>Chlamydia pneumoniae

<400>535

Met Ala Ile Gln Lys Ala Gly Ala Phe Leu Arg Cys Leu Pro Ser Glu
 1 5 10 15
 Ser Arg Pro Tyr Leu Glu His Ala Met Arg Arg Asn Pro His Phe Ser
 20 25 30
 Leu Leu Lys Pro Gln Tyr Leu Phe Ser Glu Ile Ser Lys Lys Leu Ala
 35 40 45
 Gln Phe Arg Lys Glu Asn Pro Glu Ile Ser Val Ile Asp Leu Ser Ile
 50 55 60
 Gly Asp Thr Thr Gln Pro Leu Cys Arg Ser Ile Thr Gln Ala Ile Lys
 65 70 75 80
 Glu Phe Cys Val Ser Gln Glu Lys Gln Glu Thr Tyr Arg Gly Tyr Gly
 85 90 95
 Pro Glu Thr Gly Leu Glu Lys Leu Arg Thr Lys Ile Ala Ser Glu Val
 100 105 110
 Tyr Glu Asn Arg Ile Ser Pro Glu Glu Ile Phe Ile Ser Asp Gly Ala
 115 120 125
 Lys Pro Asp Ile Phe Arg Leu Phe Ser Phe Phe Gly Ser Glu Lys Thr
 130 135 140
 Leu Gly Leu Gln Asp Pro Val Tyr Pro Ala Tyr Arg Asp Ile Ala His
 145 150 155 160
 Ile Thr Gly Ile Arg Asp Ile Ile Pro Leu Ala Cys Arg Lys Glu Thr
 165 170 175
 Gly Phe Ile Pro Glu Leu Pro Asn Gln Ser Leu Asp Ile Leu Cys
 180 185 190
 Leu Cys Tyr Pro Asn Asn Pro Thr Gly Thr Val Leu Thr Phe Gln Gln
 195 200 205
 Leu Gln Ala Leu Val Asn Tyr Ala Asn Gln His Gly Thr Val Leu Ile
 210 215 220
 Phe Asp Ala Ala Tyr Ser Ala Phe Val Ser Asp Pro Ser Leu Pro Lys
 225 230 235 240
 Ser Ile Phe Glu Ile Pro Glu Ala Lys Tyr Cys Ala Ile Glu Ile Asn
 245 250 255
 Ser Phe Ser Lys Ser Leu Gly Phe Thr Gly Met Arg Leu Ala Trp Asn
 260 265 270
 Val Ile Pro Lys Glu Leu Thr Tyr Asp Asn Asn Glu Pro Met Ile Asn
 275 280 285
 Asp Trp Lys Arg Leu Phe Ala Thr Thr Phe Asn Gly Ala Ser Leu Leu
 290 295 300
 Met Gln Glu Ala Gly Tyr Tyr Gly Leu Asp Leu Phe Pro Thr Pro Pro
 305 310 315 320
 Ala Ile Ser Leu Tyr Leu Thr Asn Ala Gln Lys Leu Lys Lys Ser Leu
 325 330 335
 Glu Thr Ala Gly Phe Ser Val His Gly Gly Asp His Ala Pro Tyr Leu
 340 345 350
 Trp Val Glu Leu Pro Glu Gly Ile Ser Asp Glu Glu Ala Phe Asp Phe
 355 360 365
 Phe Leu His Gln Tyr His Ile Ala Val Thr Pro Gly His Gly Phe Gly
 370 375 380
 Ser Cys Gly Gln Gly Phe Val Arg Phe Ser Ala Leu Thr Gln Pro Gln
 385 390 395 400
 Asn Ile Ala Leu Ala Cys Asp Arg Leu Cys Thr Ala Ser Leu Lys Glu
 405 410 415
 Thr Met Val Leu Ala
 420

<210>536

<211>354

<212>PRT

<213>Chlamydia pneumoniae

<400>536

Pro Pro Leu Tyr Arg Phe Thr Lys Arg Asn Asp Gly Ser Cys Met Thr
 1 5 10 15
 Ile Leu Arg Lys Leu Ser Gln Tyr Leu Phe Phe Phe Ser Leu Phe Cys
 20 25 30
 Ser Phe Ile Tyr Val Ala Thr Cys Gly Ser Gln Pro Asp Ser Val Ser
 35 40 45
 Ser Pro Lys Ile Ala Ile Phe Leu Ser Phe Pro His Pro Leu Leu Glu
 50 55 60
 Asp Cys Ser Lys Ser Cys Ile Glu Thr Leu Lys Asp Phe Glu Asn Leu
 65 70 75 80
 Pro Glu Ile Val Val Leu Asn Ala Glu Asp Ser Ile Val Lys Ala Arg
 85 90 95
 Lys Ile Ala Arg Ser Leu His Thr Asp Lys Asn Val Val Ala Ile Val
 100 105 110
 Thr Leu Gly Thr Ile Ala Thr Lys Val Met Ser His Ile Glu Thr Gln
 115 120 125
 Lys Pro Val Ile Tyr Ala Ala Val Pro Asp Arg Glu Ser Leu Thr Pro
 130 135 140
 Pro Lys Asn Thr Met Asn Ile Tyr Gly Val Asn Asp Thr Leu Asp Ile
 145 150 155 160
 Asn Gln Tyr Cys Phe Ala Ile Gln Ala Val Ala Thr Asn Ala Gln Ser
 165 170 175
 Ile Val Tyr Leu Lys Pro Ser Glu Pro Phe Pro Ser Asp Leu Gln Lys
 180 185 190
 Glu Ile Val Lys Lys Leu His Ala Ser Gly Ile Glu Val Ile Glu Ile
 195 200 205
 Ser Ile Thr Ser Ser Thr Phe Lys Thr Arg Ile Arg Gln Ala Ile Asp
 210 215 220
 Lys Arg Pro Ser Ala Ile Phe Ile Pro Leu Ser Pro Leu Ser His Lys
 225 230 235 240
 Glu Gly Thr Ala Phe Leu Gln Glu Ile Leu Lys Glu Lys Ile Pro Ile
 245 250 255
 Ile Thr Asp Asp Thr Ser Leu Ile Ser Glu Glu Pro Ala Leu Pro Val
 260 265 270
 Ala Trp Ile Thr Lys Asn Gln Glu Asn Lys Ser Gln Lys Ile Val His
 275 280 285
 His Leu Leu Tyr Asn Asn His Asp Val Asp Ser Leu Arg Lys Ile Ile
 290 295 300
 Ala Gln Arg Leu Ser Pro Thr Thr Thr Phe Asn Glu Asp Ile Ile Lys
 305 310 315 320
 Tyr Leu Gly Ile Lys Leu His Lys Thr Glu Arg Asn Gln Phe Leu Ser
 325 330 335
 Phe Lys Ser Lys Lys Leu Glu Lys Ser Glu Lys Gly Lys Asn Val Ala
 340 345 350
 Val Ser

<210>537

<211>290

<212>PRT

<213>Chlamydia pneumoniae

<400>537

Gln Ala Lys Ser Arg Cys Ser Ile Asp Lys Tyr Ile Pro Val Val Asn
 1 5 10 15
 Arg Leu Leu Glu Val Cys Gly Leu Pro Glu Ala Glu Asn Val Glu Asp
 20 25 30
 Leu Ile Glu Ser Ser Ser Ala Trp Val Leu Thr Pro Glu Glu Arg Phe
 35 40 45
 Ser Gly Glu Leu Val Ser Ile Cys Gln Val Lys Asp Glu His Ala Phe
 50 55 60
 Tyr Asn Asp Leu Ser Leu Leu His Met Thr Gln Ala Val Pro Ser Tyr
 65 70 75 80
 Ser Ala Thr Tyr Asp Cys Ala Val Val Phe Gly Gly Pro Leu Pro Ala
 85 90 95
 Leu Arg Gln Arg Leu Asp Phe Leu Val Arg Glu Trp Gln Arg Gly Val

100 105 110
 Arg Phe Lys Lys Ile Val Phe Leu Cys Gly Glu Arg Gly Arg Tyr Gln
 115 120 125
 Ser Ile Glu Glu Gln Glu His Phe Phe Asp Ser Arg Tyr Asn Pro Phe
 130 135 140
 Pro Thr Glu Glu Asn Trp Glu Ser Gly Asn Arg Val Thr Pro Ser Ser
 145 150 155 160
 Glu Glu Glu Val Ala Lys Phe Val Trp Met Gln Met Leu Leu Pro Arg
 165 170 175
 Ala Trp Arg Asp Ser Thr Ser Gly Val Arg Val Thr Phe Leu Leu Ala
 180 185 190
 Lys Pro Glu Glu Asn Arg Val Val Ala Asn Arg Lys Asp Thr Leu Leu
 195 200 205
 Leu Phe Arg Ser Tyr Gln Glu Ala Phe Pro Gly Arg Val Leu Phe Val
 210 215 220
 Ser Ser Gln Pro Phe Ile Gly Leu Asp Ala Cys Arg Val Gly Gln Phe
 225 230 235 240
 Phe Lys Gly Glu Ser Tyr Asp Leu Ala Gly Pro Gly Phe Ala Gln Gly
 245 250 255
 Val Leu Lys Tyr His Trp Ala Pro Arg Ile Cys Leu His Thr Leu Ala
 260 265 270
 Glu Trp Leu Lys Glu Thr Asn Gly Cys Leu Asn Ile Ser Glu Gly Cys
 275 280 285
 Phe Gly
 290
 <210>538
 <211>400
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>538
 Leu Ser Val Tyr Leu Leu Ile Phe Tyr Phe Cys Asn Cys Ser Thr Met
 1 5 10 15
 Ser Ser Val Asn Gln Ser Ser Gly Thr Pro Asn Pro Glu Glu Val Thr
 20 25 30
 Ser Pro Glu Ser Thr Glu Glu Asn Lys Asn Val Val Ser Ser Asp Glu
 35 40 45
 Ala Gln Ala Thr His Ala Val Ala Leu Pro Ile Val Thr Gln Leu Ser
 50 55 60
 Leu Pro Glu Gly Val Gly Thr Ser Ser Glu Glu Thr Ala Ser Asn Pro
 65 70 75 80
 Lys Val Asp Glu Ile Val Ala Glu Val Ser Ser Ser Arg Ala Val Ala
 85 90 95
 Asp Gln Ile Ser Ser Leu Val Glu Arg Val Gly Glu Leu Leu Asp Asp
 100 105 110
 Leu Lys Gly Ala Gln Ser Leu Phe Thr Ser Phe Gln Ser Glu Leu Lys
 115 120 125
 Asn Cys Leu Pro Ala Trp Lys Ser Ser Thr Arg Arg Leu Glu Thr Arg
 130 135 140
 Gly Ala Gly Asp Asn Ala Asp Ile Ala Arg Leu Glu Leu Phe Arg Ser
 145 150 155 160
 Asp Tyr Glu Ala Val Leu Gly His Ala Asn Gln Phe His Gly Lys Ala
 165 170 175
 His Leu Ile Leu Ser Lys Leu Thr Asp Val His His Lys Leu Gln Gly
 180 185 190
 Leu Ser Arg Glu Asp Leu Ser Leu Ala Phe Asp Asn Asn Asp Arg Val
 195 200 205
 Leu Glu His Leu Gly Ser Leu Gly Leu Asp Val Asp Ala Glu Gly Asn
 210 215 220
 Trp Ser Leu Ser Cys Glu Arg Gly Ile Pro Arg Leu Val Leu Thr Ala
 225 230 235 240
 Asp Ser Met Leu Val Gln Ile Lys Lys Val Asn Leu Pro Thr Val Glu
 245 250 255
 Glu Leu Arg Thr Leu Gln Gly Thr Thr Glu Ser Ser Ser Asp Pro Arg
 260 265 270

Val Glu Glu Ser Leu Ser Cys Cys Glu Arg Leu Leu Asn Glu Leu Arg
 275 280 285
 Arg Leu Trp Ala Asn Phe Val Gly Phe Ile Ser Ser Cys Tyr Asp Asn
 290 295 300
 Ile Val Phe Val Leu Met Trp Ile Val Arg Arg Ile Asn Leu Leu Pro
 305 310 315 320
 Gly Leu Gly Cys Leu Pro Phe His Asn Pro Asp Ala Ser Gln Glu Asp
 325 330 335
 Gln Arg Ser Ser Ser Gly Glu Arg Ser Thr Arg Arg Glu Arg Deu Ser
 340 345 350
 Arg Arg Ser Asp Leu Ser Glu Glu Glu Met Ile Val Arg Ala Glu Gly
 355 360 365
 Glu Ser Ile His Pro Glu Ser Pro His Gly Asp Gly Arg Asn Gln Pro
 370 375 380
 Ser Arg Gly Asp Lys Gln Asp Ser Asp Ser Glu Glu Thr Glu Leu
 385 390 395 400
 <210>539
 <211>568
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>539
 Met Lys Thr Ser Gln Leu Phe Tyr Lys Thr Ser Lys Asn Ala Asn Lys
 1 5 10 15
 Ser Ala Ala Val Leu Ser Asn Glu Leu Leu Glu Lys Ala Gly Tyr Leu
 20 25 30
 Phe Lys Val Ser Lys Gly Val Tyr Thr Tyr Thr Pro Leu Leu Trp Arg
 35 40 45
 Val Val Ser Lys Met Met Asn Ile Ile Arg Glu Glu Leu Asn Ala Ile
 50 55 60
 Gly Gly Gln Glu Leu Leu Leu Pro Leu Leu His Asn Ala Glu Leu Trp
 65 70 75 80
 Gln His Thr Gly Arg Trp Glu Ala Phe Thr Ser Glu Gly Leu Leu Tyr
 85 90 95
 Thr Leu Lys Asp Arg Glu Gly Lys Ser His Cys Leu Ala Pro Thr His
 100 105 110
 Glu Glu Val Ile Cys Ser Phe Val Ala Gln Trp Leu Ser Ser Lys Arg
 115 120 125
 Gln Leu Pro Leu His Leu Tyr Gln Ile Ala Thr Lys Phe Arg Asp Glu
 130 135 140
 Ile Arg Pro Arg Phe Gly Leu Ile Arg Ser Arg Glu Leu Leu Met Glu
 145 150 155 160
 Asp Ser Tyr Thr Phe Ser Asp Ser Pro Glu Gln Met Asn Glu Gln Tyr
 165 170 175
 Glu Lys Leu Arg Ser Ala Tyr Ser Lys Ile Phe Asp Arg Leu Gly Leu
 180 185 190
 Ala Tyr Val Ile Val Thr Ala Asp Gly Gly Lys Ile Gly Lys Gly Lys
 195 200 205
 Ser Glu Glu Phe Gln Val Leu Cys Ser Leu Gly Glu Asp Thr Ile Cys
 210 215 220
 Val Ser Gly Ser Tyr Gly Ala Asn Ile Glu Ala Ala Val Ser Ile Pro
 225 230 235 240
 Pro Gln His Ala Tyr Asp Arg Glu Phe Leu Pro Val Glu Glu Val Ala
 245 250 255
 Thr Pro Gly Ile Thr Thr Ile Glu Ala Leu Ala Asn Phe Phe Ser Ile
 260 265 270
 Pro Leu His Lys Ile Leu Lys Thr Leu Val Val Lys Leu Ser Tyr Ser
 275 280 285
 Asn Glu Glu Lys Phe Ile Ala Ile Gly Met Arg Gly Asp Arg Gln Val
 290 295 300
 Asn Leu Val Lys Val Ala Ser Lys Leu Asn Ala Asp Asp Ile Ala Leu
 305 310 315 320
 Ala Ser Asp Glu Glu Ile Glu Arg Val Leu Gly Thr Glu Lys Gly Phe
 325 330 335
 Ile Gly Pro Leu Asn Cys Pro Ile Asp Phe Xaa Ala Asp Glu Thr Thr

340 345 350
 Ser Pro Met Thr Asn Phe Val Cys Ala Gly Asn Ala Lys Asp Lys His
 355 360 365
 Tyr Val Asn Val Asn Trp Asp Arg Asp Leu Leu Pro Pro Gln Tyr Gly
 370 375 380
 Asp Phe Leu Leu Ala Glu Glu Gly Asp Thr Cys Pro Glu Asn Pro Gly
 385 390 395 400
 His Pro Tyr Arg Ile Tyr Gln Gly Ile Glu Val Ala His Ile Phe Asn
 405 410 415
 Leu Gly Thr Arg Tyr Thr Asp Ser Phe Glu Val Asn Phe Gln Asp Glu
 420 425 430
 His Gly Gln Thr Gln Gln Cys Trp Met Gly Thr Tyr Gly Ile Gly Val
 435 440 445
 Gly Arg Thr Leu Ala Ala Cys Val Glu Gln Leu Ala Asp Asp Arg Gly
 450 455 460
 Ile Val Trp Pro Lys Ala Leu Ala Pro Phe Ser Ile Thr Ile Ala Phe
 465 470 475 480
 Asn Gly Gly Asp Thr Val Ser Gln Glu Leu Ala Glu Thr Ile Tyr His
 485 490 495
 Glu Leu Gln Ser Gln Gly Tyr Glu Pro Leu Leu Asp Asp Arg Asp Glu
 500 505 510
 Arg Leu Gly Phe Lys Leu Lys Asp Ser Asp Leu Ile Gly Ile Pro Tyr
 515 520 525
 Lys Leu Ile Leu Gly Lys Ser Tyr Gln Ser Ser Gly Ile Phe Glu Ile
 530 535 540
 Glu Ser Arg Ser Gly Glu Lys Tyr Thr Val Ser Pro Glu Ala Phe Pro
 545 550 555 560
 Thr Trp Cys Gln Asn His Leu Ala
 565

<210>540

<211>126

<212>PRT

<213>Chlamydia pneumoniae

<400>540

Leu Thr Phe Ser Gly Ser Phe Pro Ile Met Leu Ser Val Thr Ile Val
 1 5 10 15
 Leu Val Gly Leu Glu Met Ala Arg Ser Lys Val Ser Lys Arg Asp Ser
 20 25 30
 Lys Ile Leu Asp Ile Leu Phe Ala Thr Thr Glu Leu Tyr Leu Lys Thr
 35 40 45
 Gly Gln Pro Val Gly Ser Lys Thr Leu Lys Glu Ser Phe Cys Ser Asp
 50 55 60
 Leu Ser Thr Ala Thr Ile Arg Asn Tyr Phe Ala Glu Leu Glu Ala Glu
 65 70 75 80
 Gly Phe Leu Lys Xaa Asn His Thr Ser Gly Gly Arg Ile Pro Thr Asp
 85 90 95
 Leu Ala Leu Arg His Tyr Val Asp His Gln Glu Glu Cys Pro Glu Ala
 100 105 110
 Glu Ile Ser Ala Pro Ile Phe Asp Lys Xaa Ser Xaa Leu Pro
 115 120 125

<210>541

<211>304

<212>PRT

<213>Chlamydia pneumoniae

<400>541

Ile Thr Lys Lys Asn Ala Gln Lys Leu Arg Phe Leu Pro Pro Phe Leu
 1 5 10 15
 Ile Xaa Ser Val Xaa Phe Pro Ser Glu Ser Arg Asn Ile Ile Lys Asp
 20 25 30
 Leu Gln Lys Ala Thr Glu Leu Leu Gly Glu Ile Leu Asp Leu Pro Thr
 35 40 45
 Phe Phe Ser Ser Pro Arg Phe Glu Asn Asp Ser Val Thr Asn Ile Gln
 50 55 60
 Ile Thr Gln Val Asp Lys Gln Arg Ala Val Thr Ile Leu Ser Thr Glu

65 70 75 80
 Phe Gly Gln Ile Phe Thr Asp Thr Leu Trp Leu Pro Glu Ala Cys Asp
 85 90 95
 Thr Leu Ser Ile Lys Arg Ile Glu Lys Phe Leu Gln Asn Tyr Ile Arg
 100 105 110
 Lys Leu Pro Thr Asn Glu Glu Leu Ser Lys Lys Glu Glu His Leu Ser
 115 120 125
 Met Ser Leu Tyr Asn Glu Val Val Val Arg Tyr Leu Thr Arg Tyr Cys
 130 135 140
 Asn Phe Ser Glu Glu Asp Leu Tyr Gln Thr Gly Met Ser Lys Leu Leu
 145 150 155 160
 Lys Tyr Glu Ala Phe Lys Asp Pro Glu Val Leu Ala Leu Gly Leu Ser
 165 170 175
 Leu Phe Glu Asn Arg Arg Gln Met Cys Glu Leu Leu Asn Ile Gly Met
 180 185 190
 His Lys Gly Arg Ala Thr Ala Phe Ile Gly Lys Glu Leu Ser Asp Ile
 195 200 205
 Leu Gly Thr Ser Asn Pro Gly Cys Ser Val Ile Thr Ile Pro Tyr Tyr
 210 215 220
 Met Asn Arg Ser Pro Leu Gly Ala Leu Gly Ile Leu Gly Pro Ile Asn
 225 230 235 240
 Leu Pro Tyr Lys Glu Ala Leu Pro Leu Leu Lys Leu Phe Ala Asn Lys
 245 250 255
 Ile Asn Glu Thr Leu Thr Gln Ser Phe Tyr Lys Phe Lys Leu Ser Phe
 260 265 270
 Arg Arg Pro Leu Thr Ser Asn Cys Lys Leu Ser Asn Glu Pro Ile Leu
 275 280 285
 Arg Thr Glu Tyr Ser Ser Ile Lys Leu Leu Pro Ser Lys Glu Thr Leu
 290 295 300

<210>542

<211>184

<212>PRT

<213>Chlamydia pneumoniae

<400>542

Met Thr Asp Thr Pro Pro Glu Asn Glu Glu Gln His Glu Ser Asn Val
 1 5 10 15
 Gln Asn Glu Asn Glu Val Glu His Leu Gln Gln Glu Ile Val Thr Leu
 20 25 30
 Lys Thr Glu Leu Lys Glu Lys Asn Asp Lys Tyr Leu Met Ala Leu Ala
 35 40 45
 Glu Ser Glu Asn Ser Arg Lys Arg Leu Gln Lys Glu Arg Gln Glu Leu
 50 55 60
 Met Gln Tyr Ala Leu Glu Asn Thr Leu Ile Asp Phe Leu Asn Pro Ile
 65 70 75 80
 Glu Ser Met Glu Lys Ala Leu Gly Phe Ala Thr Gln Met Ser Asp Asp
 85 90 95
 Val Lys Asn Trp Ala Leu Gly Phe Asn Met Ile Leu Asn Gln Phe Lys
 100 105 110
 Gln Ile Phe Glu Glu Lys Gly Ile Ile Glu Tyr Ser Ser Ile Gly Gln
 115 120 125
 Lys Phe Asn Pro Phe Leu His Glu Ala Val Gln Thr Glu Glu Thr Ser
 130 135 140
 Glu Val Pro Glu Gly Thr Ile Leu Glu Glu Phe Ala Lys Gly Tyr Lys
 145 150 155 160
 Ile Gly Glu Arg Pro Ile Arg Val Ala Lys Val Lys Val Ala Lys Ala
 165 170 175
 Pro Thr Pro Lys Glu Asn Lys Glu
 180

<210>543

<211>539

<212>PRT

<213>Chlamydia pneumoniae

<400>543

Met Ser Glu His Lys Lys Ser Ser Lys Ile Ile Gly Ile Asp Leu Gly

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      1           5           10           15
Thr Thr Asn Ser Cys Val Ser Val Met Glu Gly Gly Gln Ala Lys Val
      20           25           30
Ile Thr Ser Ser Glu Gly Thr Arg Thr Thr Pro Ser Ile Val Ala Phe
      35           40           45
Lys Gly Asn Glu Lys Leu Val Gly Ile Pro Ala Lys Arg Gln Ala Val
      50           55           60
Thr Asn Pro Glu Lys Thr Leu Gly Ser Thr Lys Arg Phe Ile Gly Arg
      65           70           75           80
Lys Tyr Ser Glu Val Ala Ser Glu Ile Gln Thr Val Pro Tyr Thr Val
      85           90           95
Thr Ser Gly Ser Lys Gly Asp Ala Val Phe Glu Val Asp Gly Lys Gln
      100          105          110
Tyr Thr Pro Glu Glu Ile Gly Ala Gln Ile Leu Met Lys Met Lys Glu
      115          120          125
Thr Ala Glu Ala Tyr Leu Gly Glu Thr Val Thr Glu Ala Val Ile Thr
      130          135          140
Val Pro Ala Tyr Phe Asn Asp Ser Gln Arg Ala Ser Thr Lys Asp Ala
      145          150          155          160
Gly Arg Ile Ala Gly Leu Asp Val Lys Arg Ile Ile Pro Glu Pro Thr
      165          170          175
Ala Ala Ala Leu Ala Tyr Gly Ile Asp Lys Val Gly Asp Lys Lys Ile
      180          185          190
Ala Val Phe Asp Leu Gly Glu Gly Thr Phe Asp Ile Ser Ile Leu Glu
      195          200          205
Ile Gly Asp Gly Val Phe Glu Val Leu Ser Thr Asn Gly Asp Thr Leu
      210          215          220
Leu Gly Gly Asp Asp Phe Asp Glu Val Ile Ile Lys Trp Met Ile Glu
      225          230          235          240
Glu Phe Lys Lys Gln Glu Gly Ile Asp Leu Ser Lys Asp Asn Met Ala
      245          250          255
Leu Gln Arg Leu Lys Asp Ala Ala Glu Lys Ala Lys Ile Glu Leu Ser
      260          265          270
Gly Val Ser Ser Thr Glu Ile Asn Gln Pro Phe Ile Thr Met Asp Ala
      275          280          285
Gln Gly Pro Lys His Leu Ala Leu Thr Leu Thr Arg Ala Gln Phe Glu
      290          295          300
Lys Leu Ala Ala Ser Leu Ile Glu Arg Thr Lys Ser Pro Cys Ile Lys
      305          310          315          320
Ala Leu Ser Asp Ala Lys Leu Ser Ala Lys Asp Ile Asp Asp Val Leu
      325          330          335
Leu Val Gly Gly Met Ser Arg Met Pro Ala Val Gln Glu Thr Val Lys
      340          345          350
Glu Leu Phe Gly Lys Glu Pro Asn Lys Gly Val Asn Pro Asp Glu Val
      355          360          365
Val Ala Ile Gly Ala Ala Ile Gln Gly Gly Val Leu Gly Gly Glu Val
      370          375          380
Lys Asp Val Leu Leu Leu Asp Val Ile Pro Leu Ser Leu Gly Ile Glu
      385          390          395          400
Thr Leu Gly Gly Val Met Thr Thr Leu Val Glu Arg Asn Thr Thr Ile
      405          410          415
Pro Thr Gln Lys Lys Gln Ile Phe Ser Thr Ala Ala Asp Asn Gln Pro
      420          425          430
Ala Val Thr Ile Val Val Leu Gln Gly Glu Arg Pro Met Ala Lys Asp
      435          440          445
Asn Lys Glu Ile Gly Arg Phe Asp Leu Thr Asp Ile Pro Pro Ala Pro
      450          455          460
Arg Gly His Pro Gln Ile Glu Val Ser Phe Asp Ile Asp Ala Asn Gly
      465          470          475          480
Ile Phe His Val Ser Ala Lys Asp Val Ala Ser Gly Lys Glu Gln Lys
      485          490          495
Ile Arg Ile Glu Ala Ser Ser Gly Leu Gln Glu Asp Glu Ile Gln Arg
      500          505          510
Met Val Arg Asp Ala Glu Ile Asn Lys Glu Glu Asp Lys Asn Val Val

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515 520 525
 Lys Leu Gln Met Leu Lys Met Lys Pro Ile Ala
 530 535
 <210>544
 <211>135
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>544
 Lys Arg Arg Glu Ala Ser Asp Ala Lys Asn Glu Ala Asp Ser Met Ile
 1 5 10 15
 Phe Arg Ala Glu Lys Ala Ile Lys Asp Tyr Lys Glu Gln Ile Pro Glu
 20 25 30
 Thr Leu Val Lys Glu Ile Glu Glu Arg Ile Glu Asn Val Arg Asn Ala
 35 40 45
 Leu Lys Asp Asp Ala Pro Ile Glu Lys Ile Lys Glu Val Thr Glu Asp
 50 55 60
 Leu Ser Lys His Met Gln Lys Ile Gly Glu Ser Met Gln Ser Gln Ser
 65 70 75 80
 Ala Ser Ala Ala Ala Ser Ser Ala Ala Asn Ala Lys Gly Gly Pro Asn
 85 90 95
 Ile Asn Thr Glu Asp Leu Lys Lys His Ser Phe Ser Thr Lys Pro Pro
 100 105 110
 Ser Asn Asn Gly Ser Ser Glu Asp His Ile Glu Glu Ala Asp Val Glu
 115 120 125
 Ile Ile Asp Asn Asp Asp Lys
 130 135
 <210>545
 <211>234
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>545
 Ala Thr Gln Phe Thr Ser Glu Thr Thr Gly Phe Leu Val Gln Cys Pro
 1 5 10 15
 Lys Leu Thr Gly Gly Ala Gln Leu Leu Lys Lys Pro Lys Arg Lys Pro
 20 25 30
 Gly Arg Arg Thr Tyr Gly Lys Ser Leu Lys Ile Phe Ile Pro Gly Thr
 35 40 45
 Leu Phe Val His Ala Arg Lys Gly Phe Gly Phe Val Ser Pro Asp Asn
 50 55 60
 Pro Glu Glu Tyr Pro Phe Asp Ile Phe Val Pro Ala Arg Asp Leu Arg
 65 70 75 80
 Gly Ala Leu Asp Gly Asp His Val Ile Val Ser Val Leu Pro Tyr Pro
 85 90 95
 Arg Asp Gly Gln Lys Leu Lys Gly Thr Ile Ser Glu Val Leu Ala Arg
 100 105 110
 Gly Lys Thr Thr Leu Val Gly Thr Ile Thr Ser Leu Val Ser Pro Thr
 115 120 125
 Ser Ala Leu Ala Tyr Thr Ser Met Ser Gly Ser Gln Ser Leu Ile Pro
 130 135 140
 Val Glu Leu Leu Pro Gly Arg Thr Tyr Lys Ile Gly Asp Arg Ile Leu
 145 150 155 160
 Leu Ser Thr Pro Pro Trp Val Asp Lys Pro Gln Glu Gly Ala Ser Pro
 165 170 175
 Ala Leu Gln Met Leu Glu Phe Ile Gly His Ile Thr Asn Ala Lys Ala
 180 185 190
 Asp Phe Gln Ala Ile Gln Ala Glu Tyr Asn Leu Ala Glu Glu Phe Pro
 195 200 205
 Pro Glu Val Ile Glu Glu Ala Ser Leu Phe Ser Gln Xaa Xaa Leu Thr
 210 215 220
 Gln Val Leu Gln Leu Ser Gln Arg Ser Pro
 225 230
 <210>546
 <211>258
 <212>PRT

<213>Chlamydia pneumoniae

<400>546

Pro Lys Phe Ser Asn Ser Arg Lys Asp Leu Arg Asp Leu Leu Cys Phe
 1 5 10 15
 Thr Ile Asp Ser Ser Thr Ala Arg Asp Phe Asp Asp Ala Ile Ser Leu
 20 25 30
 Thr Tyr Asp His Asn Asn Asn Tyr Ile Leu Gly Val His Ile Ala Asp
 35 40 45
 Val Ser His Tyr Val Thr Pro His Ser His Leu Asp Lys Glu Ala Ala
 50 55 60
 Lys Arg Cys Asn Ser Thr Tyr Phe Pro Gly Lys Val Ile Pro Met Leu
 65 70 75 80
 Pro Ser Ala Leu Ser Asp Asn Leu Cys Ser Leu Lys Pro Asn Val Asp
 85 90 95
 Arg Leu Ala Val Ser Val Phe Met Thr Phe Thr Lys Ser Gly His Leu
 100 105 110
 Ser Asp Tyr Gln Ile Phe Arg Ser Val Ile Arg Ser Lys Tyr Arg Met
 115 120 125
 Thr Tyr Asp Glu Val Asp Asn Ile Ile Glu Lys Lys His Ser His Pro
 130 135 140
 Leu Ser Lys Ile Leu Asn Glu Met Ala Thr Leu Ser Lys Lys Phe Ser
 145 150 155 160
 Asp Ile Arg Glu Glu Arg Gly Cys Ile Arg Phe Val Leu Pro Ser Val
 165 170 175
 Thr Met Ser Leu Asp Asn Leu Gln Glu Pro Val Ala Leu Ile Glu Asn
 180 185 190
 His Gln Thr Phe Ser His Lys Leu Ile Glu Glu Phe Met Leu Lys Ala
 195 200 205
 Asn Glu Val Val Ala Tyr His Ile Ser His Gln Gly Val Ser Leu Pro
 210 215 220
 Phe Arg Ser His Glu Pro Pro Asn Asp Glu Asn Leu Leu Ala Phe Gln
 225 230 235 240
 Glu Xaa Ala Lys Asn Met Gly Phe Asp Ile Thr Phe Thr Pro Thr Gln
 245 250 255
 Arg Thr

<210>547

<211>286

<212>PRT

<213>Chlamydia pneumoniae

<400>547

Lys Thr Thr Arg Pro Ser Pro Ile Asn Ser Ser Lys Ser Leu Cys Leu
 1 5 10 15
 Lys Gln Thr Lys Trp Ser Pro Ile Ile Ser Pro Ile Lys Ala Phe Leu
 20 25 30
 Tyr Leu Phe Val Val Thr Asn Leu Pro Met Met Lys Thr Tyr Ser Pro
 35 40 45
 Ser Lys Xaa Xaa Gln Lys Thr Trp Ala Leu Ile Ser Arg Ser Leu Pro
 50 55 60
 His Lys Glu Pro Asp Tyr Gln Tyr Leu Leu Gln Thr Thr Ser Ala Gly
 65 70 75 80
 His Pro Leu Glu Gln Val Leu His Ser Gln Phe Val Arg Ser Met Lys
 85 90 95
 Thr Ala Ser Tyr Ser Thr Glu Asn Lys Gly His Tyr Gly Leu Lys Leu
 100 105 110
 Asp Tyr Tyr Thr His Phe Thr Ser Pro Ile Arg Arg Tyr Ile Asp Leu
 115 120 125
 Ile Val His Arg Leu Leu Phe Asn Pro Leu Ser Ile Asp Gln Thr His
 130 135 140
 Leu Glu Ile Ile Val Arg Ala Cys Ser Thr Lys Glu Arg Val Ser Ala
 145 150 155 160
 Lys Ala Glu Asn Ser Phe Glu Asn Leu Lys Lys Thr Arg Phe Ile Asn
 165 170 175
 Lys Phe Leu Gln Glu Gln Pro Lys Thr Thr Tyr His Ala Tyr Ile Ile

180 185 190
 Thr Ala Asn His Glu Gly Leu Ser Phe Val Val Thr Glu Phe Cys His
 195 200 205
 Glu Gly Phe Ile Ala Ala Ala Glu Leu Pro Lys Glu Tyr Ser Leu Lys
 210 215 220
 Lys Asn Ala Leu Pro Glu Ser Ile Pro Asp Lys Met Lys Pro Gly Ala
 225 230 235 240
 Ser Arg Lys Val Thr Ile Asp Ser Val Asn Leu Leu Thr Gln Lys Ile
 245 250 255
 Val Trp Ser Ile Ala Thr Thr Thr Glu Asp Lys Pro Lys Lys Ile Lys
 260 265 270
 Lys Thr Pro Ser Lys Lys Lys Gly Thr Lys Lys Arg Ala Ser
 275 280 285

<210>548

<211>201

<212>PRT

<213>Chlamydia pneumoniae

<400>548

Lys Glu Pro Arg Asn Val Leu Gln Glu His Phe Phe Leu Ser Glu Asp
 1 5 10 15
 Val Ile Thr Leu Ala Gln Gln Leu Leu Gly His Lys Leu Ile Thr Thr
 20 25 30
 His Glu Gly Leu Ile Thr Ser Gly Tyr Ile Val Glu Thr Glu Ala Tyr
 35 40 45
 Arg Gly Pro Asp Asp Lys Ala Cys His Ala Tyr Asn Tyr Arg Lys Thr
 50 55 60
 Gln Arg Asn Arg Ala Met Tyr Leu Lys Arg Gly Ser Ala Tyr Leu Tyr
 65 70 75 80
 Arg Cys Tyr Gly Met His His Leu Leu Asn Val Val Thr Gly Pro Glu
 85 90 95
 Asp Ile Pro His Ala Val Leu Ile Arg Ala Ile Leu Pro Asp Gln Gly
 100 105 110
 Lys Glu Leu Met Ile Gln Arg Arg Gln Trp Arg Asp Lys Pro Pro His
 115 120 125
 Leu Leu Thr Asn Gly Pro Gly Lys Val Cys Gln Ala Leu Gly Ile Ser
 130 135 140
 Leu Glu Asn Asn Arg Gln Arg Leu Asn Thr Pro Ala Leu Tyr Ile Ser
 145 150 155 160
 Lys Glu Lys Ile Ser Gly Thr Leu Thr Ala Thr Ala Arg Ile Gly Ile
 165 170 175
 Asp Tyr Ala Gln Glu Tyr Arg Asp Val Pro Trp Arg Phe Leu Leu Ser
 180 185 190
 Pro Glu Asp Ser Gly Lys Val Leu Ser
 195 200

<210>549

<211>189

<212>PRT

<213>Chlamydia pneumoniae

<400>549

Ala Trp Leu Arg Asn Ser Leu Thr Lys Phe Ser Phe Tyr Thr Lys His
 1 5 10 15
 Arg Ala Leu Leu Lys Phe Val Leu Gln Ile Ile Leu Leu Phe Gly Leu
 20 25 30
 Phe Phe Ala Thr Val Leu Leu Gly Phe Leu Thr Arg Ile Met Ile Phe
 35 40 45
 Lys Ser Leu Leu Ser Ile Tyr Asp Lys Ile Leu His Arg Ile Pro Ile
 50 55 60
 Ile Lys Thr Val Tyr Lys Ala Ala Gln Gln Val Met Thr Thr Ile Phe
 65 70 75 80
 Gly Ser Lys Ser Gly Ser Phe Lys Gln Val Val Met Val Pro Phe Pro
 85 90 95
 Asn Ala Asn Val Gln Cys Ile Gly Leu Val Ala Gly Asp Ala Pro Thr
 100 105 110
 Val Cys Cys Thr Gly Glu Lys Glu Asp Asp Pro Leu Val Thr Val Phe

115 120 125
 Ile Pro Thr Thr Pro Asn Pro Thr Ser Gly Phe Leu Thr Leu Phe Arg
 130 135 140
 Lys Ser Asp Ile Val Phe Leu Asp Met Lys Ile Glu Asp Ala Phe Lys
 145 150 155 160
 Tyr Ile Ile Ser Cys Gly Val Leu Ser Thr Pro Met Ala Cys Pro Ser
 165 170 175
 Ser Pro Leu Pro Asp Glu Leu His Gln Asp Gln Gly Ser
 180 185
 <210>550
 <211>390
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>550
 Gln Leu Asn Met Leu His Ile Leu Leu Ala Ile Phe Cys Ile Leu Leu
 1 5 10 15
 Phe Leu Ala Phe Gly Leu Thr Gln Pro Ser Cys His Gly Ser Ser Lys
 20 25 30
 Phe Leu Lys Thr Leu Asn Gln Arg Phe Phe Thr Asp Lys Gly Arg Glu
 35 40 45
 Tyr Pro Pro Phe Pro Ser Ala Pro Thr Ile Leu Ala Thr Leu Leu Cys
 50 55 60
 Ile Leu Tyr Gly Ala Leu Gly Thr Lys Leu Tyr Thr Leu Leu Pro Pro
 65 70 75 80
 Lys Thr Ala His Lys Asp Leu Leu Phe Trp Pro Leu Tyr Ser Leu Ser
 85 90 95
 Ala Leu Ile Ala Tyr Gly Phe Leu Pro Pro Trp Ile Ser Thr Lys Val
 100 105 110
 Pro Lys Glu Thr Thr Ala His Leu Arg Phe Leu Ala Ser Val Phe Gln
 115 120 125
 Leu Gly Leu Phe Pro Leu Gln Leu Leu Phe Tyr Arg Arg Arg Pro Asn
 130 135 140
 Gln Gln Val Arg Ser Ser Thr Ser Phe Gln Ser Gln Leu Ser Glu Ala
 145 150 155 160
 Leu Ser Ala Phe Asp Asn Leu Ile Val Arg Glu Val Met Ile Pro Lys
 165 170 175
 Val Asp Ile Phe Ala Leu Pro Glu Glu Thr Thr Leu Gln Glu Ala Leu
 180 185 190
 Val Leu Val Ser Glu Glu Gly Tyr Ser Arg Val Pro Val Tyr Lys Lys
 195 200 205
 Asn Leu Asp Asn Ile Thr Gly Ile Leu Leu Val Lys Asp Leu Leu Leu
 210 215 220
 Leu Tyr Thr Ser Ser His Asp Leu Ser Gln Pro Ile Ser Ser Val Ala
 225 230 235 240
 Lys Pro Pro Phe Tyr Ala Pro Glu Ile Lys Lys Ala Ser Ser Leu Leu
 245 250 255
 Gln Glu Phe Arg Gln Lys His Arg His Leu Ala Ile Ile Val Asn Glu
 260 265 270
 Tyr Gly Phe Thr Glu Gly Ile Ala Thr Met Glu Asp Ile Ile Glu Glu
 275 280 285
 Ile Ile Gly Glu Ile Ala Asp Glu His Asp Val Gln Glu Asn Thr Pro
 290 295 300
 Tyr Lys Lys Ile Gly Ser Ser Trp Ile Val Asp Gly Arg Met Asn Ile
 305 310 315 320
 Ser Asp Ala Glu Glu Tyr Phe Asn Leu Lys Ile Asp His Glu Asn Ser
 325 330 335
 Tyr Asp Thr Leu Gly Gly His Val Phe His Lys Val Gly Ala Val Pro
 340 345 350
 Gln Lys Gly Met Arg Ile His His Glu Asn Phe Asp Ile Glu Ile Ile
 355 360 365
 Thr Cys Thr Glu Arg Asn Val Gly Lys Leu Lys Ile Thr Pro Arg Lys
 370 375 380
 Arg Lys Phe Asn Ile Ser
 385 390

<210>551

<211>116

<212>PRT

<213>Chlamydia pneumoniae

<400>551

Met Ser Asp Ile Gln Lys Glu Glu His Gly Ser Thr Thr Ile Phe His
 1 5 10 15
 Leu His Gly Lys Leu Asp Gly Ile Ser Ser Pro Glu Val Gln Glu Asn
 20 25 30
 Ile Tyr Gln Ser Leu Ala Ala Gly Ser Lys Asn Ile Ile Leu Asp Cys
 35 40 45
 Ala His Leu Asp Tyr Met Ser Ser Ala Gly Ile Arg Val Leu Leu Gln
 50 55 60
 Ser Tyr His Gln Val Gly Gln His Ser Gly Lys Ile Val Leu Thr Thr
 65 70 75 80
 Val Pro Lys Thr Ile Glu Gln Thr Leu Tyr Val Thr Gly Phe Leu Ser
 85 90 95
 Tyr Phe Lys Ile Phe Asn Thr Val Asp Glu Ala Ile Gln Thr Leu Asn
 100 105 110
 Lys Asp Gly Asp
 115

<210>552

<211>212

<212>PRT

<213>Chlamydia pneumoniae

<400>552

Ser Leu Pro Leu Thr Met Arg Arg Ser Val Cys Tyr Val Asn Pro Ser
 1 5 10 15
 Ile Ala Arg Ala Gly Gln Ile Ser Thr Trp Lys Phe Leu Tyr Ser Leu
 20 25 30
 Ala Thr Pro Leu Pro Ala Gly Thr Lys Cys Lys Phe Asp Leu Ala Gly
 35 40 45
 Ser Gly Lys Pro Thr Asp Trp Glu Ala Pro Ala Thr Asp Leu Ser Gln
 50 55 60
 Thr Arg Asn Val Ile Tyr Ala Glu Met Pro Glu Gly Glu Ile Ile Glu
 65 70 75 80
 Ala Thr Ala Ile Pro Val Lys Asp Asn Pro Val Pro Gln Phe Glu Phe
 85 90 95
 Thr Leu Pro Tyr Glu Leu Gln Val Gly Glu Thr Leu Thr Ile Val Met
 100 105 110
 Gly Ala Ser Pro Asn His Pro Gln Val Asp Asp Ala Gly Asn Gly Ala
 115 120 125
 Gln Leu Phe Ala Gln Arg Arg Lys Pro Phe Tyr Leu Tyr Ile Asp Pro
 130 135 140
 Thr Gly Glu Gly Asn Tyr Asp Glu Pro Asp Val Phe Ser Met Asp Ile
 145 150 155 160
 Arg Gly Asn Val Leu Lys Lys Ile Glu Ile Phe Thr Pro Ser Tyr Val
 165 170 175
 Val Lys Asn Lys Arg Phe Asp Ile Thr Val Arg Phe Glu Asp Glu Phe
 180 185 190
 Gly Asn Leu Thr Asn Phe Ser Pro Glu Glu Asp Pro Asn Arg Ala Phe
 195 200 205
 Leu Arg Ala Ser
 210

<210>553

<211>457

<212>PRT

<213>Chlamydia pneumoniae

<400>553

Arg Ser Leu Leu Pro Pro Met Ser Leu Lys Thr Asn Ala Ser Ile Ser
 1 5 10 15
 Pro Cys Asp Leu Lys Thr Asn Ser Gly Thr Ser Pro Thr Ser Leu Leu
 20 25 30
 Lys Lys Thr Arg Ile Glu Leu Ser Tyr Glu His Leu Arg Glu Asn Leu

35 40 45
 Asn Trp Gln Leu Phe Ile Pro Glu Thr Gly Phe Val Ile Leu Pro Asn
 50 55 60
 Leu Tyr Phe Asn Glu Pro Gly Ile Tyr Arg Ile Gln Leu Lys Asn Leu
 65 70 75 80
 Ser Thr Gln Xaa Ile Phe Ile Ser Ala Pro Ile Lys Cys Phe Ala Asp
 85 90 95
 Ser Ala Pro Asn Leu Met Trp Gly Leu Leu His Gly Glu Ser Glu Arg
 100 105 110
 Val Asp Ser Glu Glu Asn Ile Glu Thr Cys Met Arg Tyr Phe Arg Asp
 115 120 125
 Asp Arg Ala Leu Asn Phe Tyr Ala Ser Ser Ser Phe Glu Asn Gln Glu
 130 135 140
 Asn Leu Ser Pro Asp Ile Trp Lys Leu Ile Asn Gln Thr Val Ser Asp
 145 150 155 160
 Phe Asn Glu Glu Asp Arg Phe Ile Thr Leu Ser Gly Phe Gln Tyr Ser
 165 170 175
 Gly Glu Pro His Leu Glu Gly Val Arg His Ile Leu His Thr Lys Glu
 180 185 190
 Thr Lys Ser His Ser Lys His Lys Glu Tyr Lys His Ile Pro Leu Ala
 195 200 205
 Lys Leu Tyr Lys Ser Thr Val Asn His Asp Met Ile Ser Ile Pro Ser
 210 215 220
 Phe Thr Ala Ser Lys Glu His Gly Phe Asp Phe Glu Asn Phe Tyr Pro
 225 230 235 240
 Glu Phe Glu Arg Val Val Glu Ile Tyr Asn Ala Trp Gly Ser Ser Glu
 245 250 255
 Thr Thr Ala Ala Leu Asn Asn Pro Phe Pro Ile Gln Gly Lys Asp Ser
 260 265 270
 Glu Asp Pro Arg Gly Thr Val Ile Glu Gly Leu Lys Lys Asn Leu Arg
 275 280 285
 Phe Gly Phe Val Ala Gly Gly Leu Asp Asp Arg Gly Ile Tyr Lys Asp
 290 295 300
 Tyr Phe Asp Ser Pro Gln Val Gln Tyr Ser Pro Gly Leu Thr Ala Ile
 305 310 315 320
 Ile Cys Asn Lys Tyr Thr Arg Glu Ser Leu Val Glu Ala Leu Phe Ala
 325 330 335
 Arg His Cys Tyr Ala Thr Thr Gly Pro Arg Ile Val Leu Ser Phe Asn
 340 345 350
 Ile Thr Ser Ala Pro Met Gly Ser Glu Leu Ser Thr Gly Ser Lys Pro
 355 360 365
 Gly Leu Asn Val Asn Arg His Ile Ser Gly His Val Ala Gly Thr Ala
 370 375 380
 Leu Leu Lys Thr Val Glu Ile Ile Arg Asn Gly Glu Val Leu His Thr
 385 390 395 400
 Phe Phe Pro Asp Ser Asn Asn Leu Asp Tyr Glu Tyr Asp Asp Met Val
 405 410 415
 Pro Leu Ser Ser Val Thr Leu Lys Asp Pro Asn Gly Lys Ala Pro Phe
 420 425 430
 Val Phe Tyr Tyr Leu Arg Val Thr Gln Ala Asp Asn Ala Met Ala Trp
 435 440 445
 Ser Ser Pro Ile Trp Val Asp Leu Asn
 450 455
 <210>554
 <211>409
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>554
 Leu Ala Gly Pro Ser Leu Lys Gly Val Lys Asn Gln Ile Ala Ala Lys
 1 5 10 15
 Lys Lys His Val Thr Lys Gln Ser Thr Val Leu Gln Asn Leu Glu Arg
 20 25 30
 Ile Val His Gln Ser Val His Gln Met Thr Thr Cys Leu Pro Gln Pro
 35 40 45

Pro Lys Thr Ser Pro Pro Tyr Ser Ile Phe Glu Lys Leu Asp Ala Gln
 50 55 60
 Glu Arg Leu Ser Ser Glu Asp Ala Leu His Leu Leu Leu Thr Asn
 65 70 75 80
 Lys Glu Asp Gln Arg Thr Leu Trp Asn Phe Ala Asp Gln Val Arg Lys
 85 90 95
 Gln Arg Val Gly Asp Thr Val Tyr Tyr Ser Ser Thr Leu Tyr Leu Tyr
 100 105 110
 Pro Thr Asn Phe Cys Asp Phe Ser Cys Lys Phe Cys Ser Phe Tyr Ala
 115 120 125
 Lys Pro Gly Asp Pro Lys Gly Trp Leu Tyr Ser Pro Asp Asp Leu Leu
 130 135 140
 Gln Gln Ile Gln Asn Ile Lys Thr Pro Ile Thr Glu Val His Ile Val
 145 150 155 160
 Gly Gly Cys Phe Pro Ser Cys Asn Leu Gln Tyr Tyr Ser Asp Leu Phe
 165 170 175
 Thr Lys Ile Lys Glu Tyr Asp Pro Gln Ile His Ile Lys Ala Leu Thr
 180 185 190
 Ala Ile Glu Tyr Ala Tyr Leu Ser Asp Leu Asp Asn Leu Ser Ile Arg
 195 200 205
 Asp Val Leu Leu Thr Leu Lys Asp Ala Gly Leu Asp Ser Ile Pro Gly
 210 215 220
 Gly Gly Ala Glu Ile Leu Val Asp Lys Ile Arg Asn Phe Leu Ala Pro
 225 230 235 240
 Lys Arg Leu Ser Ser Ser Asp Phe Leu Asn Ile His Lys Met Ala His
 245 250 255
 Gln Leu Gly Ile His Ser Asn Ile Thr Met Leu Cys Tyr His Lys Glu
 260 265 270
 Gly Pro Glu Asp Leu Val Thr His Met Val Lys Val Arg Asp Leu Gln
 275 280 285
 Asp Glu Thr Gln Gly Phe Lys Asn Phe Ile Leu Leu Lys Phe Ala Gln
 290 295 300
 Glu Asn Asn Val Leu Gly Lys Arg Leu Arg Lys Ser Gly Gln Gly His
 305 310 315 320
 Ala Ile Pro Leu Lys Ser Leu Met Ala Val Ala Arg Ile Phe Leu Asp
 325 330 335
 Asn Phe Ser Asn Met Lys Ala Leu Trp Asn Tyr Leu Gly Ile Glu Ala
 340 345 350
 Ala Leu Asp Leu Leu Ser Cys Gly Ala Asn Asp Leu Ser Ser Thr His
 355 360 365
 Met Gly Glu Lys Val Phe Gln Met Ala Ser Ser Lys Glu Pro Ile Lys
 370 375 380
 Met Asp Ala Glu Gly Met Ala Ala Leu Ile Thr Gln Gln Gly Arg Thr
 385 390 395 400
 Pro Cys Leu Thr Asn Ser Ser His Val
 405

<210>555

<211>277

<212>PRT

<213>Chlamydia pneumoniae

<400>555

Gly Asn Gly Gly Pro His His Thr Thr Arg Glu Asn Ala Met Ser Asn
 1 5 10 15
 Gln Leu Gln Pro Cys Ile Ser Leu Gly Cys Val Ser Tyr Ile Asn Ser
 20 25 30
 Phe Pro Leu Ser Leu Gln Leu Ile Lys Arg Asn Asp Ile Arg Cys Val
 35 40 45
 Leu Ala Pro Pro Ala Asp Leu Leu Asn Leu Leu Ile Glu Gly Lys Leu
 50 55 60
 Asp Val Ala Leu Thr Ser Ser Leu Gly Ala Ile Ser His Asn Leu Gly
 65 70 75 80
 Tyr Val Pro Gly Phe Gly Ile Ala Ala Asn Gln Arg Ile Leu Ser Ala
 85 90 95
 Asn Leu Tyr Ala Ala Pro Thr Phe Phe Asn Ser Pro Gln Pro Arg Ile

100 105 110
 Ala Ala Thr Leu Glu Ser Arg Ser Ser Ile Gly Leu Leu Lys Val Leu
 115 120 125
 Cys Arg His Leu Trp Arg Ile Pro Thr Pro His Ile Leu Arg Phe Ile
 130 135 140
 Thr Thr Lys Val Leu Arg Gln Thr Pro Glu Asn Tyr Asp Gly Leu Leu
 145 150 155 160
 Leu Ile Gly Asp Ala Ala Leu Gln His Pro Val Leu Pro Gly Phe Val
 165 170 175
 Thr Tyr Asp Leu Ala Ser Gly Trp Tyr Asp Leu Thr Lys Leu Pro Phe
 180 185 190
 Val Phe Ala Leu Leu Leu His Ser Thr Ser Trp Lys Glu His Pro Leu
 195 200 205
 Pro Asn Leu Ala Met Glu Glu Ala Leu Gln Gln Phe Glu Ser Ser Pro
 210 215 220
 Glu Glu Val Leu Lys Glu Ala His Gln His Thr Gly Leu Pro Pro Ser
 225 230 235 240
 Leu Leu Gln Glu Tyr Tyr Ala Leu Cys Gln Tyr Arg Leu Gly Glu Glu
 245 250 255
 His Tyr Glu Ser Phe Glu Lys Phe Arg Glu Tyr Tyr Gly Thr Leu Tyr
 260 265 270
 Gln Gln Ala Arg Leu
 275

<210>556

<211>237

<212>PRT

<213>Chlamydia pneumoniae

<400>556

Leu Lys Asn Ser Gly Asn Ile Met Glu Pro Ser Thr Asn Lys Pro Asp
 1 5 10 15
 Cys Lys Lys Ile Phe Asp Ser Ile Ala Ser Lys Tyr Asp Arg Thr Asn
 20 25 30
 Thr Ile Leu Ser Leu Gly Met His His Phe Trp Asn Arg Ser Leu Ile
 35 40 45
 Gln Ile Leu Gly Ser Gly Tyr Ser Leu Leu Asp Leu Cys Ala Gly Thr
 50 55 60
 Gly Lys Val Ala Lys Arg Tyr Ile Ala Ala His Pro Gln Ala Ser Val
 65 70 75 80
 Thr Leu Val Asp Phe Ser Ser Ala Met Leu Asp Ile Ala Lys Gln His
 85 90 95
 Leu Pro Gln Gly Ser Cys Ser Phe Ile His Ser Asp Ile Asn Gln Leu
 100 105 110
 Pro Leu Glu Asn His Ser Tyr Pro Leu Ala Ala Met Ala Tyr Gly Leu
 115 120 125
 Arg Asn Leu Ser Asp Pro His Lys Ala Leu Gln Glu Ile Ser Arg Val
 130 135 140
 Leu Met Pro Ser Gly Lys Leu Gly Ile Leu Glu Leu Thr Pro Pro Lys
 145 150 155 160
 Lys Thr His Pro Thr Tyr Ser Ala His Lys Leu Tyr Leu Arg Ala Val
 165 170 175
 Val Pro Trp Ile Gly Lys Ser Val Ser Lys Asp Pro Asp Ala Tyr Ser
 180 185 190
 Tyr Leu Ser Lys Ser Ile Gln Gln Leu Pro Lys Asp His Asp Leu Glu
 195 200 205
 Asp Leu Phe Ser Lys Ser Gly Phe Tyr Ile Ala Lys Lys Lys Lys Leu
 210 215 220
 Phe Leu Gly Ala Ala Thr Ile Trp Leu Leu Glu Lys Gln
 225 230 235

<210>557

<211>550

<212>PRT

<213>Chlamydia pneumoniae

<400>557

Arg Ile Ser Ile Ser Phe Arg Val Ser Trp Phe Val Lys Ile Ile Leu

1	5	10	15
Ala Val Leu Gly Arg Ala Ile Ala Lys Ala Tyr Tyr Val Cys Met Val			
20	25	30	
Ala Arg Gly Leu Cys Asp Phe Pro Thr Leu Val Pro Asn Glu Arg Leu			
35	40	45	
Pro Ile Gly Pro Phe Phe Val Pro Gln His Thr Ser Gly Ala Lys Gly			
50	55	60	
Lys Glu Phe Ala Lys Arg Asn Phe Ser Ile Ile Ser Gly Leu Asp Asp			
65	70	75	80
Ile Leu Lys Leu Cys Ile Leu Gln Arg Arg Pro Phe Ala Leu Gln Trp			
85	90	95	
Asp Asn Leu Ser Val Lys Ser Asp Tyr Glu Glu Ala Gly Pro Ala Ile			
100	105	110	
Gly Ile Arg Ser Leu Glu Pro Gln Val Ser Gln Ile Ser Pro Ala His			
115	120	125	
Gly Arg Leu Cys Ser Thr Leu Val Gln Trp Ala Pro Ile Leu Gly Ser			
130	135	140	
Glu Glu Arg Leu Val Trp Leu Glu Glu Thr Met Lys Arg Leu Lys Phe			
145	150	155	160
Pro Lys Ser Leu Gly Ser Lys Asp Ala Val Ile Val Asp Ser Glu Met			
165	170	175	
Val Pro Val Asn Ala Asn Pro Thr Gln Glu Ile Pro Ala Ala Ser Glu			
180	185	190	
Thr Val Glu Ser Ser Pro Val Ala Pro Gly Asn Thr Thr Asp Thr Met			
195	200	205	
Pro Ala Ala Ser Gly Thr Thr Asp Thr Thr Ser Gly Val Ser Glu Ala			
210	215	220	
Ala Ala Ala Glu Ala Thr Val Asp Ser Thr Pro Gly Thr Glu Glu Glu			
225	230	235	240
Pro Ser Phe Ser Leu Arg Tyr Ala Leu Val Val Gln Asn Val Pro Tyr			
245	250	255	
Pro Glu Pro Pro Lys Glu Pro Glu Val Met Phe Thr Asp Glu Glu Lys			
260	265	270	
Ser Leu Ile Leu Glu Ala Thr Arg Ala Arg Arg Met Glu Leu Asp Leu			
275	280	285	
Tyr Asn Gly Tyr Leu Ala Asp Tyr Glu Leu Ser Lys Asp Glu Ile Gln			
290	295	300	
Lys His Val Pro Asp Leu Pro Glu Asn Trp Arg Thr Asn Trp Arg Trp			
305	310	315	320
Ser Glu Arg Leu Tyr Lys Phe Phe Phe Lys Thr Lys Lys Glu Gly Leu			
325	330	335	
Glu Glu Ile Phe Leu Asn Lys Glu Leu Gly Asn Met Ile Leu Ala Arg			
340	345	350	
Gly Leu Ala Ala Thr Gln Ser Gln Ala Arg Ile Lys Val Phe Asn Ser			
355	360	365	
Leu Val Ala Trp Leu Leu Gln Ser Phe Asn Val Gly Arg Ser Cys Thr			
370	375	380	
Ala Lys Pro Leu Pro Thr Ser Lys Leu Asp Leu Phe Lys Ser Glu Phe			
385	390	395	400
Glu Ser Lys Pro Lys Asn Asn Ile Leu Thr Glu Phe Leu Val Ala Ser			
405	410	415	
Asp Glu Glu Ile Leu Phe Lys Gly Leu Arg Val Leu Glu Pro Gly Ile			
420	425	430	
Glu Gly Trp Tyr Asp His Pro Asp Gln Ala Gly Glu Ile Arg Ser Val			
435	440	445	
Leu Glu Gly Leu Val Gln Ala Gly Arg Ile Ser Gly Tyr Trp Glu Asn			
450	455	460	
Gln Pro Phe Gly Arg Phe Val Leu Arg Gly Val Gly Glu Arg Arg Thr			
465	470	475	480
Glu Leu Val Glu Leu Leu Glu Ser Leu Val Ala Ser Gly Glu Ile Met			
485	490	495	
Gln Phe Phe Glu Ser Ser Asp Glu Glu Gly Ala Phe Ile Ile Asp Asn			
500	505	510	
Glu Pro Ser Lys Thr Ala Met Leu Lys Gln Arg Phe Lys Ser Cys Val			

515 520 525
 Arg Thr Lys Leu Val Gly Ser Phe Ala Asp Glu Ser Leu Pro Arg Gly
 530 535 540
 Arg Phe Thr Ile Leu Val
 545 550
 <210>558
 <211>325
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>558
 Phe Met Met Thr Tyr Pro Val Pro Gln Asn Pro Leu Leu Leu Arg Ile
 1 5 10 15
 Leu Arg Leu Met Asp Ala Phe Ser Lys Ser Asp Asp Glu Arg Asp Phe
 20 25 30
 Tyr Leu Asp Arg Val Glu Gly Phe Ile Leu Tyr Ile Asp Leu Asp Lys
 35 40 45
 Asp Gln Glu Asp Leu Asn Lys Ile Tyr Gln Glu Leu Glu Glu Asn Ala
 50 55 60
 Glu Arg Tyr Cys Leu Ile Pro Lys Leu Thr Phe Tyr Glu Val Lys Lys
 65 70 75 80
 Ile Met Glu Thr Phe Ile Asn Glu Lys Ile Tyr Asp Ile Asp Thr Lys
 85 90 95
 Glu Lys Phe Leu Glu Ile Leu Gln Ser Lys Asn Ala Arg Glu Gln Phe
 100 105 110
 Leu Glu Phe Ile Tyr Asp His Glu Ala Glu Leu Glu Lys Trp Gln Gln
 115 120 125
 Phe Tyr Val Glu Arg Ser Arg Ile Arg Ile Ile Glu Trp Leu Arg Asn
 130 135 140
 Asn Lys Phe His Phe Val Phe Glu Glu Asp Leu Asp Phe Thr Lys Asn
 145 150 155 160
 Val Leu Glu Gln Leu Lys Ile His Leu Phe Asp Ala Lys Val Gly Lys
 165 170 175
 Glu Ile Thr Gln Ala Arg Gln Leu Leu Ser Asn Lys Ala Lys Ile Tyr
 180 185 190
 Tyr Ser Asn Glu Ala Leu Asn Pro Arg Pro Lys Arg Gly Arg Pro Pro
 195 200 205
 Lys Gln Ser Ala Lys Val Glu Thr Glu Thr Thr Ile Ser Ser Asp Ile
 210 215 220
 Tyr Thr Lys Val Pro Gln Ala Ala Arg Arg Phe Leu Phe Leu Pro Glu
 225 230 235 240
 Ile Thr Ser Pro Ser Ser Ile Thr Phe Ser Glu Lys Phe Asp Thr Glu
 245 250 255
 Glu Glu Phe Leu Ala Asn Leu Arg Gly Ser Thr Arg Val Glu Asp Gln
 260 265 270
 Leu Asn Leu Thr Asn Leu Ser Glu Arg Phe Ala Ser Leu Lys Glu Leu
 275 280 285
 Ser Ala Lys Leu Gly Tyr Asp Ser Leu Ser Thr Gly Asp Phe Phe Gly
 290 295 300
 Asp Asp Asp Glu Lys Val Val Thr Lys Thr Lys Gly Ser Lys Arg Gly
 305 310 315 320
 Arg Lys Lys Ser Ser
 325

<210>559

<211>261

<212>PRT

<213>Chlamydia pneumoniae

<400>559

Leu Val Tyr Trp Met Ala Phe Tyr Ser Pro Ser Thr Ile Ser Lys Tyr
 1 5 10 15
 Phe Ile Tyr Ser Gly Ala Gly Asn Arg Phe Leu Leu Gly Glu Thr Leu
 20 25 30
 Pro Glu Val Glu Asp Val Arg Phe Leu Cys Gln Glu Thr Arg Val Asp
 35 40 45
 Gly Phe Leu Tyr Leu Lys Pro Ser Ser Cys Ala Asp Ala Gln Leu Ile

50 55 60
 Ile Phe Asn Ser Asp Gly Ser Arg Pro Thr Met Cys Gly Asn Gly Leu
 65 70 75 80
 Arg Cys Ala Ile Ala His Leu Ala Ser Gln Lys Gly Lys Ser Asp Ile
 85 90 95
 Ser Val Ser Thr Asp Ser Gly Leu Tyr Ser Gly Tyr Phe Tyr Ser Trp
 100 105 110
 Asp Arg Val Leu Val Asp Met Thr Leu Ala Asp Trp Arg Ala Ser Val
 115 120 125
 His Arg Leu Glu Ser Arg Pro Asp Pro Leu Pro Lys Glu Ile Val Cys
 130 135 140
 Ile His Thr Gly Val Pro His Ala Val Val Ile Leu Pro Glu Ile Ser
 145 150 155 160
 Thr Leu Asp Leu Ser Ile Leu Gly Pro Phe Leu Arg Tyr His Gln Thr
 165 170 175
 Phe Ser Pro Asp Gly Val Asn Val Asn Phe Val Gln Ile Leu Gly His
 180 185 190
 Cys Gln Leu Arg Val Arg Thr Tyr Glu Arg Gly Val Glu Gly Glu Thr
 195 200 205
 Ala Ala Cys Gly Thr Gly Ala Leu Ala Ser Ala Leu Val Val Ser Asn
 210 215 220
 Ser Tyr Gly Trp Lys Glu Ser Ile Gln Ile His Thr Trp Gly Gly Glu
 225 230 235 240
 Leu Met Thr Val Ser Gln Asn Arg Gly Arg Val Tyr Leu Gln Gly Ser
 245 250 255
 Val Thr Arg Asp Leu
 260

<210>560

<211>196

<212>PRT

<213>Chlamydia pneumoniae

<400>560

Glu Arg His Tyr Phe Met Ala Asp Gly Glu Val His Lys Leu Arg Asp
 1 5 10 15
 Ile Ile Glu Lys Glu Leu Leu Glu Ala Arg Arg Val Phe Phe Ser Glu
 20 25 30
 Pro Val Thr Glu Lys Ser Ala Ser Asp Ala Ile Lys Lys Leu Trp Tyr
 35 40 45
 Leu Glu Leu Lys Asp Pro Gly Lys Pro Ile Val Phe Val Ile Asn Ser
 50 55 60
 Pro Gly Gly Ser Val Asp Ala Gly Phe Ala Val Trp Asp Gln Ile Lys
 65 70 75 80
 Met Leu Thr Ser Pro Val Thr Thr Val Val Thr Gly Leu Ala Ala Ser
 85 90 95
 Met Gly Ser Val Leu Ser Leu Cys Ala Ala Pro Gly Arg Arg Phe Ala
 100 105 110
 Thr Pro His Ser Arg Ile Met Ile His Gln Pro Ser Ile Gly Gly Pro
 115 120 125
 Ile Thr Gly Gln Ala Thr Asp Leu Asp Ile His Ala Arg Glu Ile Leu
 130 135 140
 Lys Thr Lys Ala Arg Ile Ile Asp Val Tyr Val Glu Ala Thr Asn Gln
 145 150 155 160
 Pro Arg Asp Ile Ile Glu Lys Ala Ile Asp Arg Asp Met Trp Met Thr
 165 170 175
 Ala Asn Glu Ala Lys Asp Phe Gly Leu Leu Asp Gly Ile Leu Phe Ser
 180 185 190
 Phe Asn Asp Leu
 195

<210>561

<211>519

<212>PRT

<213>Chlamydia pneumoniae

<400>561

Leu Leu Lys Val Phe Glu Lys Phe Lys Lys Phe Ala Ile Val Glu Ile

1 5 10 15
 Phe Thr Lys Val Val Ala Val Val Ser Leu Leu His Lys Phe Leu Glu
 20 25 30
 Asn Ala Ser Gly Lys Lys Gly Gln Ser Leu Ala Ser Thr Ala Tyr Leu
 35 40 45
 Ala Ala Leu Asp His Leu Leu Asn Ala Phe Pro Ser Ile Gly Glu Arg
 50 55 60
 Ile Ile Asp Glu Leu Lys Ser Gln Arg Ser His Leu Lys Met Ile Ala
 65 70 75 80
 Ser Glu Asn Tyr Ser Ser Leu Ser Val Gln Leu Ala Met Gly Asn Leu
 85 90 95
 Leu Thr Asp Lys Tyr Cys Glu Gly Ser Pro Phe Lys Arg Phe Tyr Ser
 100 105 110
 Cys Cys Glu Asn Val Asp Ala Ile Glu Trp Glu Cys Val Glu Thr Ala
 115 120 125
 Lys Glu Leu Phe Ala Ala Asp Cys Ala Cys Val Gln Pro His Ser Gly
 130 135 140
 Ala Asp Ala Asn Leu Leu Ala Val Met Ala Ile Leu Thr His Lys Val
 145 150 155 160
 Gln Gly Pro Ala Val Ser Lys Leu Gly Tyr Lys Thr Val Asn Glu Leu
 165 170 175
 Thr Glu Glu Glu Tyr Thr Leu Leu Lys Ala Glu Met Ser Ser Cys Val
 180 185 190
 Cys Leu Gly Pro Ser Leu Asn Ser Gly Gly His Leu Thr His Gly Asn
 195 200 205
 Val Arg Leu Asn Val Met Ser Lys Leu Met Arg Cys Phe Pro Tyr Asp
 210 215 220
 Val Asn Pro Asp Thr Glu Cys Phe Asp Tyr Ala Glu Ile Ser Arg Leu
 225 230 235 240
 Ala Lys Glu Tyr Lys Pro Lys Val Leu Ile Ala Gly Tyr Ser Ser Tyr
 245 250 255
 Ser Arg Arg Leu Asn Phe Ala Val Leu Lys Gln Ile Ala Glu Asp Cys
 260 265 270
 Gly Ser Val Leu Trp Val Asp Met Ala His Phe Ala Gly Leu Val Ala
 275 280 285
 Gly Gly Val Phe Val Asp Glu Glu Asn Pro Ile Pro Tyr Ala Asp Ile
 290 295 300
 Val Thr Thr Thr Thr His Lys Thr Leu Arg Gly Pro Arg Gly Gly Leu
 305 310 315 320
 Val Leu Ala Thr Arg Glu Tyr Glu Ser Thr Leu Asn Lys Ala Cys Pro
 325 330 335
 Leu Met Met Gly Gly Pro Leu Pro His Val Ile Ala Ala Lys Thr Val
 340 345 350
 Ala Leu Lys Glu Ala Leu Ser Val Asp Phe Lys Lys Tyr Ala His Gln
 355 360 365
 Val Val Asn Asn Ala Arg Arg Leu Ala Glu Arg Phe Leu Ser His Gly
 370 375 380
 Leu Arg Leu Leu Thr Gly Gly Thr Asp Asn His Met Met Val Ile Asp
 385 390 395 400
 Leu Gly Ser Leu Gly Ile Ser Gly Lys Ile Ala Glu Asp Ile Leu Ser
 405 410 415
 Ser Val Gly Ile Ala Val Asn Arg Asn Ser Leu Pro Ser Asp Ala Ile
 420 425 430
 Gly Lys Trp Asp Thr Ser Gly Ile Arg Leu Gly Thr Pro Ala Leu Thr
 435 440 445
 Thr Leu Gly Met Gly Ile Asp Glu Met Glu Glu Val Ala Asp Ile Ile
 450 455 460
 Val Lys Val Leu Arg Asn Ile Arg Leu Ser Cys His Val Glu Gly Ser
 465 470 475 480
 Ser Lys Lys Asn Lys Gly Glu Leu Pro Glu Ala Ile Ala Gln Glu Ala
 485 490 495
 Arg Asp Arg Val Arg Asn Leu Leu Leu Arg Phe Pro Leu Tyr Pro Glu
 500 505 510
 Ile Asp Leu Glu Ala Leu Val

515

<210>562

<211>367

<212>PRT

<213>Chlamydia pneumoniae

<400>562

Lys Val Phe Tyr Lys Lys Asn Val Met Ser Gly Pro Ser Arg Thr Glu
 1 5 10 15
 Ser Ser Gln Val Ser Val Leu Ser Tyr Val Pro Arg Asp Lys Glu Ile
 20 25 30
 Ala Pro Lys Lys Gln Phe Thr Ile Ala Lys Ile Ser Thr Leu Ala Ile
 35 40 45
 Leu Ala Ser Leu Ala Leu Gly Ala Leu Val Ala Gly Ile Ser Leu Thr
 50 55 60
 Ile Val Leu Gly Asn Pro Val Phe Leu Ala Leu Leu Ile Thr Thr Ala
 65 70 75 80
 Leu Phe Ser Val Val Thr Phe Leu Val Tyr His Gln Met Thr Ser Lys
 85 90 95
 Val Ser Ser Asn Trp Gln Lys Val Leu Glu Gln Asn Phe Lys Pro Leu
 100 105 110
 Gly Lys Ala Trp Gln Glu Lys Asn Val Asp Cys Xaa Ser Asn Glu Met
 115 120 125
 Gln Phe Tyr Asn Asn His Leu Asn Pro Lys Phe Lys Val Ala Ile Gln
 130 135 140
 Thr Asp Ala Xaa Gln Pro Phe Gln Pro Thr Phe Leu Thr Gly Leu Arg
 145 150 155 160
 Val Ile Glu Lys Asn Gln Ser Thr Gly Ile Ile Phe Asn Pro Val Gly
 165 170 175
 Pro Thr Asn Leu Ile Asp Asn Thr Ala Thr Asn Leu Ser Thr Ile Leu
 180 185 190
 Tyr Ser Thr Leu Lys Asp Lys Ser Val Trp Asp Thr Cys Lys Gln Arg
 195 200 205
 Glu Gly Gly Pro Ala Lys Gly Glu Asp Pro Phe Ser Pro Thr Glu Val
 210 215 220
 Arg Val Val Lys Leu Pro Asn Glu Ala Leu Asp Gln Thr Phe Asn Leu
 225 230 235 240
 Asn Leu Ser Ser Ala Glu Lys Lys Ser Ile Leu Pro Thr Phe Leu Gly
 245 250 255
 His Val Cys Gly Pro Lys Ser Glu Glu Leu Pro Asn Gln Gln Glu Tyr
 260 265 270
 Tyr Arg Gln Ala Leu Leu Ala Tyr Glu Asn Cys Leu Lys Ala Ala Ile
 275 280 285
 Glu Ser His Ala Ala Ile Val Ala Leu Pro Leu Phe Thr Ser Val Tyr
 290 295 300
 Glu Val Pro Pro Glu Glu Ile Leu Pro Lys Glu Gly Thr Phe Tyr Trp
 305 310 315 320
 Asp Asn Gln Thr Gln Ala Phe Cys Lys Arg Ala Leu Leu Asp Ala Ile
 325 330 335
 Gln Asn Thr Ala Leu Arg Tyr Pro Gln Arg Ser Leu Leu Val Ile Leu
 340 345 350
 Gln Asp Pro Phe Asn Thr Ile Glu Ser Gln Ser Arg Ser Glu Glu
 355 360 365

<210>563

<211>258

<212>PRT

<213>Chlamydia pneumoniae

<400>563

Gly Ile Ile Phe Met His Asp Ala Leu Leu Ser Ile Leu Ala Ile Gln
 1 5 10 15
 Glu Leu Asp Ile Lys Met Ile Arg Leu Met Arg Val Lys Lys Glu His
 20 25 30
 Gln Lys Glu Leu Ala Lys Val Gln Ser Leu Lys Ser Asp Ile Arg Arg
 35 40 45
 Lys Val Gln Glu Lys Glu Leu Glu Met Glu Asn Leu Lys Thr Gln Ile

50 55 60
 Arg Asp Gly Glu Asn Arg Ile Gln Glu Ile Ser Glu Gln Ile Asn Lys
 65 70 75 80
 Leu Glu Asn Gln Gln Ala Ala Val Lys Lys Met Asp Glu Phe Asn Ala
 85 90 95
 Leu Thr Gln Glu Met Thr Thr Ala Asn Lys Glu Arg Arg Ser Leu Glu
 100 105 110
 His Gln Leu Ser Asp Leu Met Asp Lys Gln Ala Gly Gly Glu Asp Leu
 115 120 125
 Ile Val Ser Leu Lys Glu Ser Leu Ala Ser Thr Glu Asn Ser Ser Ser
 130 135 140
 Val Ile Glu Lys Glu Ile Phe Glu Ser Ile Lys Lys Ile Asn Glu Glu
 145 150 155 160
 Gly Lys Ala Leu Leu Glu Gln Arg Thr Glu Leu Lys His Ala Thr Asn
 165 170 175
 Pro Glu Leu Leu Ser Ile Tyr Glu Arg Leu Leu Asn Asn Lys Lys Asp
 180 185 190
 Arg Val Val Val Pro Ile Glu Asn Arg Val Cys Ser Gly Cys His Ile
 195 200 205
 Val Leu Thr Pro Gln His Glu Asn Leu Val Arg Xaa Lys Asp Arg Leu
 210 215 220
 Ile Phe Cys Glu His Cys Ser Arg Ile Leu Tyr Trp Gln Glu Ser Gln
 225 230 235 240
 Val Asn Ala Gln Glu Asn Ser Thr Ala Lys Arg Arg Arg Arg Ala
 245 250 255
 Ala Val

<210>564

<211>329

<212>PRT

<213>Chlamydia pneumoniae

<400>564

Met Pro Ser Pro Met Ile Ser Thr Asp Val Cys Gln Asp Ile Leu Gly
 1 5 10 15
 Lys Gln Lys Glu Ala Val Asp Phe Phe Phe Gln Ala Phe Gln Pro Lys
 20 25 30
 Glu Ala Met Gln Leu Ala Glu Lys Ile Leu Gly His Ser Gly Trp Val
 35 40 45
 Phe Phe Ser Gly Val Gly Lys Ser Gly Cys Val Ala Arg Lys Leu Val
 50 55 60
 Ala Thr Leu Gln Ser Leu Ser Glu Arg Ala Leu Phe Phe Ser Pro Val
 65 70 75 80
 Asp Leu Leu His Gly Asp Leu Gly Leu Val Ser Pro Gly Asp Ile Val
 85 90 95
 Cys Leu Phe Ser Lys Ser Gly Glu Thr Gln Glu Leu Leu Asp Thr Val
 100 105 110
 Pro His Leu Lys Ser Arg Arg Ala Ile Leu Val Ala Ile Thr Ser Met
 115 120 125
 Pro Tyr Ser Asn Leu Ala Ala Leu Ser Asp Leu Val Val Ile Leu Pro
 130 135 140
 Ser Val Ala Glu Leu Asp Pro Phe Asn Leu Ile Pro Thr Asn Ser Thr
 145 150 155 160
 Thr Cys Gln Met Ile Phe Gly Asp Phe Leu Ala Met Leu Leu Phe His
 165 170 175
 Ser Arg Gly Val Ser Leu Ser Thr Tyr Gly Lys Asn His Pro Ser Gly
 180 185 190
 Gln Val Gly Met Lys Ala Asn Gly Lys Val Lys Asp Phe Met Phe Pro
 195 200 205
 Lys Thr Glu Val Pro Phe Cys His Leu Gly Asp Lys Val Ser Phe Ser
 210 215 220
 Leu Glu Val Phe Ser Ala Tyr Gly Cys Gly Cys Val Cys Ile Val Asp
 225 230 235 240
 Pro Gln Phe Arg Leu Met Gly Ile Phe Thr Asp Gly Asp Leu Arg Arg
 245 250 255

Ser Leu Ala Ser Tyr Gly Gly Glu Val Leu Ser Leu Ser Leu Glu Lys
 260 265 270
 Val Met Thr Ala Asn Pro Arg Cys Ile Thr Glu Asp Ser Asp Ile Ala
 275 280 285
 Ile Ala Leu Gln Leu Met Glu Ser Ser Ser Pro Val Ala Val Leu Pro
 290 295 300
 Val Leu Asp Asn Glu Glu Asn Arg His Val Thr Gly Leu Leu His Met
 305 310 315 320
 His Thr Leu Ala Lys Ala Gly Leu Leu
 325
 <210>565
 <211>393
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>565
 Met Ile Phe Glu Phe Arg Phe Pro Lys Ile Gly Glu Thr Ser Ser Gly
 1 5 10 15
 Gly Ser Ile Val Arg Trp Leu Lys Asn Leu Gly Asp His Val Ala Arg
 20 25 30
 Asp Glu Pro Leu Ile Glu Val Ser Thr Asp Lys Ile Ala Thr Glu Leu
 35 40 45
 Pro Ser Pro Lys Ala Gly Arg Leu Val Arg Phe Cys Val Asn Glu Gly
 50 55 60
 Asp Glu Val Ala Ser Gly Asp Val Leu Gly Leu Ile Glu Leu Glu Glu
 65 70 75 80
 Ile Ser Glu Ala Asp Asp Glu Ser Thr Ser Cys Pro Leu Thr Ser Cys
 85 90 95
 Glu Thr Lys Ser Glu Ala Gly Ser Ser Ser Ser Val Trp Phe Ser
 100 105 110
 Pro Ala Val Leu Ser Leu Ala Gln Arg Glu Gly Ile Gly Leu Asp Asn
 115 120 125
 Leu Gln Lys Ile Ala Gly Thr Gly Lys Gly Gly Arg Val Thr Arg Gln
 130 135 140
 Asp Leu Glu Ala Tyr Ile Ser Glu Ser Gln Gln Val Ser Ile Pro Glu
 145 150 155 160
 Ile Phe Gln Gly Glu Val Asn Arg Ile Pro Met Ser Pro Leu Arg Arg
 165 170 175
 Ala Ile Ala Ser Ser Leu Ser Lys Ser Ser Asp Glu Val Pro His Ala
 180 185 190
 Ser Leu Val Val Asp Val Asp Val Thr Asp Leu Met Asn Leu Ile Ser
 195 200 205
 Gly Glu Arg Gln Arg Phe Leu Asp Thr His Gly Val Lys Leu Thr Ile
 210 215 220
 Thr Ser Phe Ile Val Gln Cys Leu Ala Gln Thr Leu Arg Gln Phe Pro
 225 230 235 240
 Leu Leu Asn Gly Ser Leu Asp Gly Thr Thr Ile Val Met Lys Lys Ser
 245 250 255
 Val Asn Val Gly Val Ala Val Asn Leu Asn Lys Glu Gly Val Val Val
 260 265 270
 Pro Val Ile His Asn Cys Gln Asp Arg Gly Leu Val Ser Ile Ala Lys
 275 280 285
 Ala Leu Ala Asp Leu Ser Ser Arg Ala Arg Leu Asn Lys Leu Asp Pro
 290 295 300
 Ser Glu Val Gln Asp Gly Ser Val Thr Val Thr Asn Phe Gly Met Thr
 305 310 315 320
 Gly Ala Leu Ile Gly Met Pro Ile Ile Arg Tyr Pro Glu Val Ala Ile
 325 330 335
 Leu Gly Ile Gly Thr Ile Gln Lys Arg Val Val Val Arg Asp Asp Asp
 340 345 350
 Ser Leu Ala Ile Arg Lys Met Val Tyr Val Thr Leu Thr Phe Asp His
 355 360 365
 Arg Val Leu Asp Gly Ile Tyr Gly Ser Glu Phe Leu Thr Ser Leu Lys
 370 375 380
 Asn Arg Leu Glu Ser Val Thr Met Gly

385 390
 <210>566
 <211>90
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>566
 Ala Lys Leu Ser Thr Ala Gly Glu Asn His Thr Glu Glu Leu Leu Glu
 1 5 10 15
 Pro Ala Ser Asp Phe Val Ser Gln Glu Val Arg Gly His Glu Val Leu
 20 25 30
 Ser Ser Ser Ala Ser Glu Ile Ser Ser Ser Ser Ile Asn Pro Lys Thr
 35 40 45
 Ser Pro Glu Ala Thr Ser Ser Pro Ser Leu Thr Gln Lys Arg Thr Ser
 50 55 60
 Arg Pro Ala Leu Gly Glu Gly Asn Ser Val Ala Ile Leu Ser Val Asp
 65 70 75 80
 Thr Ser Ile Arg Gly Ser Ser Leu Ala Thr
 85 90
 <210>567
 <211>415
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>567
 Leu Met Lys Leu Trp Met Lys Ile Phe Ile Gly Leu Phe Val Gly Val
 1 5 10 15
 Thr Leu Gly Leu Val Leu Glu Asp Lys Ala Ile Phe Phe Lys Pro Ile
 20 25 30
 Gly Asp Ile Phe Leu Asn Leu Leu Ser Met Val Val Tyr Pro Leu Val
 35 40 45
 Phe Cys Ser Met Val Leu Gly Ile Ala Ser Ile Ser Asp Met Lys Lys
 50 55 60
 Leu Gly Arg Ile Gly Ile Lys Ser Val Gly Leu Tyr Leu Gly Thr Thr
 65 70 75 80
 Ala Leu Ala Ile Val Ile Gly Leu Cys Phe Ala Trp Ile Phe Ser Pro
 85 90 95
 Gly Asn Gly Cys Asp Phe Ala Gln Ala Gln Ser Met Asp Ser Ala Val
 100 105 110
 Thr Val Ile Asp Ser Asn Lys Thr Ala Ala Tyr Phe Leu Ser Ile Ile
 115 120 125
 Ala Gln Val Phe Pro Ser Asn Pro Val Arg Ser Phe Ala Glu Gly Asn
 130 135 140
 Ile Leu Gln Ile Ile Ile Phe Ala Ile Phe Leu Gly Ile Ala Leu Arg
 145 150 155 160
 Leu Ser Gly Glu Arg Gly Arg Pro Val Glu Arg Phe Ile Asp Gly Phe
 165 170 175
 Ser Glu Ile Met Leu Arg Met Val Asn Met Ile Met Ser Phe Ala Pro
 180 185 190
 Tyr Gly Val Gly Ala Ser Met Ala Trp Ile Ser Gly Asn His Gly Leu
 195 200 205
 Gly Val Leu Trp Gln Leu Gly Lys Phe Ile Ile Ala Tyr Tyr Leu Ala
 210 215 220
 Cys Leu Phe His Ala Thr Leu Val Phe Gly Gly Leu Val Arg Phe Gly
 225 230 235 240
 Cys Lys Met Ser Phe Ser Lys Phe Leu Ser Ser Met Met Asp Ala Ile
 245 250 255
 Ser Cys Ala Val Ser Thr Ala Ser Ser Ala Thr Leu Pro Val Thr
 260 265 270
 Met Arg Cys Val Ser Lys Asn Leu Gly Val Ser Ala Glu Val Ser Gly
 275 280 285
 Phe Val Leu Pro Leu Gly Ala Thr Val Asn Met Asn Gly Thr Ala Ile
 290 295 300
 Phe Gln Gly Met Ala Ala Val Phe Ile Ala Gln Ala Tyr Asn Cys Pro
 305 310 315 320
 Leu Ser Leu Ser Ser Leu Leu Leu Leu Val Val Thr Ala Thr Phe Ser

325 330 335
 Ala Val Gly Ser Ala Gly Val Pro Gly Gly Gly Met Ile Thr Leu Gly
 340 345 350
 Ser Val Leu Ala Ser Val Gly Leu Pro Ile Gln Gly Ile Ala Ile Leu
 355 360 365
 Ala Gly Ile Asp Arg Leu Arg Asp Ile Val Gly Thr Pro Met Asn Ile
 370 375 380
 Leu Gly Asp Ala Val Val Ala Thr Tyr Val Ala Ser Gly Glu Gly Glu
 385 390 395 400
 Leu Ser Pro Tyr Glu Ser Ile Lys Gln Glu Ser Val Glu Thr Thr
 405 410 415

<210>568

<211>365

<212>PRT

<213>Chlamydia pneumoniae

<400>568

Met Lys Lys Arg Phe Pro Ser Thr Leu Phe Leu Phe Tyr Arg Arg Val
 1 5 10 15
 Thr Ile Ala Ile Ser Leu Glu Gly Ile Leu Gly Trp Gly Trp Leu Gly
 20 25 30
 Ser Leu Leu Ser Lys Val Phe Ala Phe Leu Val Ala Cys Trp Asn Arg
 35 40 45
 Phe Ser Trp Ser Thr Pro Tyr Arg Ala Arg Ser Thr Val Ile Ser Val
 50 55 60
 Gly Asn Ile Val Val Gly Gly Ala Gly Lys Thr Pro Thr Val Leu Trp
 65 70 75 80
 Leu Ala Glu Ala Leu Arg Leu Arg Gly Tyr Ser Cys Gly Val Leu Ser
 85 90 95
 Arg Gly Tyr Lys Ser Gln Ser Ser Arg Gln Lys Lys Leu Thr Val Val
 100 105 110
 Asp Ser Lys Val His Ser Ala Ser Tyr Val Gly Asp Glu Pro Leu Leu
 115 120 125
 Met Ala Glu Lys Leu Pro Glu Gly Ser Val Trp Val His Lys Asp Arg
 130 135 140
 Arg Ile Ser Ala Ala Arg Ala Ala Glu Lys Phe Gly Ile Leu Leu Leu
 145 150 155 160
 Asp Asp Gly Leu Gln Tyr Arg Lys Leu His Lys Asp Val Glu Ile Ala
 165 170 175
 Val Val Asn Gly Gln Asp Pro Leu Gly Gly Arg Ala Phe Phe Pro Lys
 180 185 190
 Gly Arg Leu Arg Asp Phe Pro Leu Arg Leu Lys Thr Val Asp Ala Ile
 195 200 205
 Ile Val Asn Gly Gly Gly Lys Glu Ala Gly Thr Val Val Lys Arg Val
 210 215 220
 Ser Asn Ala Pro Gln Ile Phe Val Lys Pro Thr Ile Ala Ser Val Val
 225 230 235 240
 Trp Thr His Asn Gly Glu Arg Ile Pro Lys Glu Ala Leu Arg Glu Leu
 245 250 255
 Arg Val Gly Val Phe Cys Gly Leu Gly Phe Pro Gln Gly Phe Leu Asn
 260 265 270
 Met Leu Arg Glu Glu Gly Ile His Ile Leu Gly Lys Tyr Leu Leu Pro
 275 280 285
 Asp His Ala Ala Ile Thr Lys Lys Glu Leu Asn Tyr Phe Cys Gln Gln
 290 295 300
 Met Ala Met Arg Gln Gly Gln Gly Leu Leu Cys Thr Glu Lys Asp Ser
 305 310 315 320
 Val Lys Leu Pro Arg Leu Ser Gly Glu Val Ser Leu Leu Pro Ile Ala
 325 330 335
 Lys Val Glu Met Arg Leu Ser Val Asn Gln Asp Asp Thr Leu Ser Leu
 340 345 350
 Leu Asn Met Ile Glu Gln Ile His Lys Asn Arg Gly Asn
 355 360 365

<210>569

<211>287

<212>PRT

<213>Chlamydia pneumoniae

<400>569

Val Val Leu Trp Gly Lys Phe Leu Trp Arg Arg Cys Gly Ser Leu Ala
 1 5 10 15
 Phe Trp Glu Phe Cys Ser Met Asp Cys Ile Gly Lys His Asn Pro Leu
 20 25 30
 Val Lys Glu Ala Leu Ala Leu Lys Arg Ser Arg Cys Arg Lys Ser Ser
 35 40 45
 Trp Phe Leu Val Glu Gly Ala Arg Glu Ile Gln Lys Ala Leu Arg Thr
 50 55 60
 Gly Tyr Leu Cys Gln His Val Phe Cys Ser Thr His Leu Ser Glu Lys
 65 70 75 80
 Glu Lys Glu Phe Leu Tyr Glu Leu Lys Arg Asn Ser Thr Lys Ile Leu
 85 90 95
 Tyr Cys Leu Asp Ser Thr Leu Ala Gln Leu Ser Phe Lys Glu His His
 100 105 110
 Asp Ser Phe Val Ala Val Ile Gln Lys Arg Val Trp Asn Lys Glu Asp
 115 120 125
 Phe Leu Ile Gln Arg Lys Asn Ala Gln Pro Phe Tyr Leu Ile Ile Glu
 130 135 140
 Gln Val Glu Lys Pro Gly Asn Val Gly Ala Ile Leu Arg Ile Ala Asp
 145 150 155 160
 Gly Ala Gly Val Asp Gly Val Ile Leu Cys Asn Pro Ile Val Asp Leu
 165 170 175
 Tyr Asn Pro Asn Val Val Arg Ser Ser Leu Gly Ala Val Phe Ser Leu
 180 185 190
 Pro Ile Leu Ser Ile Ser Arg Glu Gly Lys Glu Leu Phe Lys Gln
 195 200 205
 Glu Gly Trp Thr Val Phe Val Thr Ser Pro Arg Ala Glu Thr Met Tyr
 210 215 220
 Phe Ser Lys Asn Tyr Leu Gly Pro Thr Ala Leu Val Phe Gly Ser Glu
 225 230 235 240
 Lys Asp Gly Leu Thr Glu Asp Trp Phe Ser Glu Asp Phe Ser Glu Ile
 245 250 255
 Ala Leu Pro Met Leu Gly Glu Ser Asp Ser Leu Asn Leu Ala Thr Ser
 260 265 270
 Val Ala Ala Val Ala Tyr Glu Val Val Arg Gln Arg Trp Val Asn
 275 280 285

<210>570

<211>321

<212>PRT

<213>Chlamydia pneumoniae

<400>570

Asp Ser Ser Lys Asp Asp Phe Arg Lys Glu Lys Gly Arg Arg Lys Ser
 1 5 10 15
 Gln Tyr Arg Asp Arg Tyr Val Asn Lys Asp Thr Gly Arg His Ser Lys
 20 25 30
 Thr Tyr Phe Ser Leu Ile Arg Glu Arg Leu Val Met Asp Tyr Lys Leu
 35 40 45
 Leu Asp Ser Gly Asp Gly Asn Lys Leu Glu Cys Phe Gly Pro Val Thr
 50 55 60
 Leu Ile Arg Pro Ser Ser Ile Ala Val Trp Pro Lys Ser Arg Pro Glu
 65 70 75 80
 Leu Trp Ser Gln Ala Gln Leu Gln Tyr Val Arg Glu Gly Glu Arg Gly
 85 90 95
 Ala Trp Lys Asn Phe Lys Arg Leu Pro Glu Glu Trp Glu Val Ala Phe
 100 105 110
 Ser Asp Val Arg Cys Leu Leu Lys Arg Thr Pro Phe Gly His Leu Gly
 115 120 125
 Val Phe Pro Glu His Met Gly Phe Trp Pro Ala Leu Lys Gln Ala Ile
 130 135 140
 Glu Lys His Lys Glu Arg Gln Val Leu Asn Leu Phe Ala Tyr Thr Gly
 145 150 155 160

Ala Gly Ser Ile Phe Ala Ala Lys Cys Gly Ala Arg Val Thr His Val
 165 170 175
 Asp Ala Ser Gln Ala Ala Val Arg Trp Ala Gln Arg Asn Val Glu Lys
 180 185 190
 Asn Ala Phe Pro Glu Arg Arg Ile Phe Trp Val Ile Glu Asp Val Ile
 195 200 205
 Ser Phe Leu Lys Lys Glu Ile Arg Arg Asn Lys Lys Tyr Gln Val Ile
 210 215 220
 Leu Leu Asp Pro Pro Ser Tyr Gly Arg Gly Pro Asp Gly Glu Val Phe
 225 230 235 240
 Lys Ile Asp Lys Asp Leu Phe Pro Leu Leu Ser Leu Cys Ser Lys Leu
 245 250 255
 Leu Ala Asp Asp Ala Ser Tyr Phe Leu Leu Thr Ser His Thr Pro Gly
 260 265 270
 His Thr Pro Glu Phe Leu Arg Ala Ile Ala Arg Arg Arg Cys Gln Pro
 275 280 285
 Leu Phe Leu Lys Arg Gly Leu Val Gly Lys Val Phe Val Glu Lys Val
 290 295 300
 Trp Glu Pro Cys Leu Leu Gly Val Leu Phe Asn Gly Leu His Arg Glu
 305 310 315 320
 Thr

<210>571

<211>200

<212>PRT

<213>Chlamydia pneumoniae

<400>571

Met Phe Ser Gly Ile Ile Gln Glu Leu Gly Glu Val Cys Phe Phe Glu
 1 5 10 15
 Ala Gln Gly Asn Gly Leu Ser Leu Gly Ile Lys Ser Thr Pro Leu Phe
 20 25 30
 Val Thr Pro Leu Val Thr Gly Asp Ser Val Ala Val Asp Gly Val Cys
 35 40 45
 Leu Thr Leu Thr Ser Cys Asn Glu Ser Lys Ile Phe Phe Asp Val Ile
 50 55 60
 Pro Glu Thr Leu Ala Cys Thr Thr Leu Gly Glu Lys Arg Cys Ser Asp
 65 70 75 80
 Gln Val Asn Leu Glu Ala Ala Leu Lys Met Gly Asp Ser Ile Gly Gly
 85 90 95
 His Leu Leu Ser Gly His Val Phe Gly Thr Ala Glu Ile Phe Leu Ile
 100 105 110
 Lys Glu Asn Arg Tyr Tyr Phe Arg Gly Ser Lys Glu Leu Ser Gln Tyr
 115 120 125
 Leu Phe Glu Lys Gly Phe Ile Ala Ile Asp Gly Val Ser Leu Thr Leu
 130 135 140
 Val Ser Val Asp Ser Asp Thr Phe Ser Val Gly Leu Ile Pro Glu Thr
 145 150 155 160
 Leu Gln Arg Thr Thr Leu Gly Lys Lys Arg Glu Gly Glu Arg Val Asn
 165 170 175
 Ile Glu Ile Asp Met Ser Thr Lys Ile Gln Val Asp Thr Val Lys Arg
 180 185 190
 Ile Leu Ala Ser Ser Gly Lys Asp
 195 200

<210>572

<211>152

<212>PRT

<213>Chlamydia pneumoniae

<400>572

Met Gln Cys Pro Phe Cys Asn His Gly Glu Leu Lys Val Ile Asp Ser
 1 5 10 15
 Arg Asn Ala Pro Glu Ala Asn Ala Ile Lys Arg Arg Arg Glu Cys Leu
 20 25 30
 Lys Cys Ser Gln Arg Phe Thr Thr Phe Glu Thr Val Glu Leu Thr Leu
 35 40 45

Gln Val Leu Lys Arg Asp Gly Arg Tyr Glu Asn Phe Gln Glu Ser Lys
 50 55 60
 Leu Ile His Gly Leu Asn Ala Ala Ser Ser His Thr Arg Ile Gly Gln
 65 70 75 80
 Asp Gln Val His Ala Ile Ala Ser Asn Val Lys Ser Glu Leu Leu Gly
 85 90 95
 Lys Gln Asn Arg Glu Ile Ser Thr Lys Glu Ile Gly Glu Leu Val Met
 100 105 110
 Lys Tyr Leu Lys Lys Ala Asp Met Ile Ala Tyr Ile Arg Phe Ala Cys
 115 120 125
 Val Tyr Arg Arg Phe Lys Asp Val Gly Glu Leu Met Glu Val Leu Leu
 130 135 140
 Ser Ala Thr Pro Asp Met Glu Lys
 145 150

<210>573

<211>132

<212>PRT

<213>Chlamydia pneumoniae

<400>573

Leu Asn Phe Ile Arg Ser Lys Val Val Pro Leu Ser Asp Asp Glu Ile
 1 5 10 15
 Glu Gln Phe Lys Lys Arg Leu Leu Glu Met Lys Ala Lys Leu Ser His
 20 25 30
 Thr Leu Glu Gly Asn Ala Gln Glu Val Lys Lys Pro Asn Glu Ala Thr
 35 40 45
 Gly Tyr Ser Gln His Gln Ala Asp Gln Gly Thr Asp Thr Phe Asp Arg
 50 55 60
 Thr Ile Ser Leu Glu Val Thr Thr Lys Glu Tyr Glu Leu Leu Arg Gln
 65 70 75 80
 Ile Asn Arg Ala Leu Glu Lys Ile Asn Glu Ser Ser Tyr Gly Ile Cys
 85 90 95
 Asp Val Ser Gly Glu Glu Ile Pro Leu Ala Arg Leu Ile Ala Ile Pro
 100 105 110
 Tyr Ala Thr Met Thr Val Lys Ala Gln Glu Gln Phe Glu Lys Gly Leu
 115 120 125
 Leu Ser Gly Asn
 130

<210>574

<211>168

<212>PRT

<213>Chlamydia pneumoniae

<400>574

Met Ala Thr Arg Phe Arg Ser Thr Leu Leu Val Ile Thr Leu Phe Val
 1 5 10 15
 Leu Ile Asp Trp Val Thr Lys Leu Val Val Leu Leu Gln Tyr Lys Asp
 20 25 30
 Leu Gln Ile Leu Thr His Pro Thr Leu Tyr Thr His Ser Trp Gly Arg
 35 40 45
 Phe Ser Phe Ser Ile Ala Pro Val Phe Asn Glu Gly Ala Ala Phe Gly
 50 55 60
 Leu Phe Ser Asn Tyr Lys Tyr Phe Leu Phe Leu Arg Ile Phe Val
 65 70 75 80
 Ile Leu Gly Leu Leu Ala Tyr Leu Phe Phe Lys Lys Lys Ser Ile Gln
 85 90 95
 Ser Thr Thr Gln Thr Ala Leu Val Leu Leu Cys Ala Gly Ala Ile Gly
 100 105 110
 Asn Val Gly Asp Ile Ile Phe Tyr Gly His Ile Val Asp Phe Ile Ser
 115 120 125
 Phe Asn Tyr Lys Gln Trp Ala Phe Pro Thr Phe Asn Val Ala Asp Val
 130 135 140
 Leu Ile Ser Leu Gly Thr Leu Leu Leu Val Tyr Lys Phe Tyr Phe Pro
 145 150 155 160
 Thr Lys Gln Thr Glu Lys Lys Arg
 165

<210>575

<211>449

<212>PRT

<213>Chlamydia pneumoniae

<400>575

Met Asn Arg Leu Leu Ser Leu Leu Ser Val Phe Asp Asp Phe Phe Trp
 1 5 10 15
 Ser Tyr Val Ala Phe Ile Leu Ile Ile Val Leu Gly Val Ser Phe Ser
 20 25 30
 Trp Lys Ser Arg Phe Phe Gln Phe Thr Lys Phe Ser Gln Phe Cys Lys
 35 40 45
 Leu Phe Arg Tyr Tyr Ser Gln Asn Pro Gln Glu Arg Glu Thr Lys Gln
 50 55 60
 Gly Val His Pro Leu Lys Val Phe Phe Ala Ser Ala Gly Gly Asn Ile
 65 70 75 80
 Gly Ile Gly Asn Val Val Gly Ile Val Thr Ala Ala Cys Ile Gly Gly
 85 90 95
 Pro Gly Ala Leu Phe Trp Val Trp Ile Ala Gly Ile Phe Gly Ser Ile
 100 105 110
 Val Lys Tyr Ser Glu Val Tyr Leu Gly Ile Lys Phe Arg Lys Leu Asp
 115 120 125
 Arg Asp Gly Val Tyr Gln Gly Gly Pro Met Tyr Phe Leu Ile Lys Ala
 130 135 140
 Phe Lys Thr Pro Val Val Ser Val Ile Val Ala Ile Leu Leu Cys Ile
 145 150 155 160
 Tyr Gly Val Glu Ile Tyr Gln Phe Ser Val Ile Thr Asp Ser Leu Ala
 165 170 175
 His Cys Trp Asn Leu Pro Lys Val Tyr Pro Met Leu Gly Leu Leu Phe
 180 185 190
 Leu Val Phe Tyr Ala Ile Arg Gly Gly Leu Gln Arg Ile Gly Lys Ile
 195 200 205
 Cys Ser Ile Val Leu Pro Phe Phe Met Leu Leu Tyr Cys Ala Leu Ser
 210 215 220
 Leu Tyr Ile Leu Val Lys Glu Phe His Thr Leu Pro His Leu Leu Ser
 225 230 235 240
 Thr Val Phe Ser Ser Ala Phe Lys Gly Gln Ser Ala Leu Gly Gly Phe
 245 250 255
 Ala Gly Cys Thr Val Ala Thr Thr Ile His Gln Gly Ile Ser Arg Ala
 260 265 270
 Ala Tyr Ser Gly Asp Ile Gly Ile Gly Phe Asp Ser Ile Ile Gln Ser
 275 280 285
 Glu Ser Ser Ala Lys Asp Pro Ser Thr Gln Ala Gln Leu Ser Ile Val
 290 295 300
 Gly Ile Ala Ile Asp Asn Leu Ile Cys Thr Leu Ser Leu Leu Met Val
 305 310 315 320
 Leu Ala Ser Gly Ser Trp Ser Leu Gly Leu Glu Asn Ala Ser Gln Val
 325 330 335
 Val Glu His Thr Leu Ala Ser Tyr Phe Pro Met Val Lys Phe Phe Leu
 340 345 350
 Pro Thr Phe Phe Phe Val Thr Gly Tyr Thr Thr Ile Ile Ser Tyr Phe
 355 360 365
 Leu Val Gly Lys Lys Cys Ala Lys Phe Leu Tyr Gly Asn Thr Gly Ala
 370 375 380
 Lys Ile Tyr Thr Leu Tyr Gly Leu Leu Ile Leu Pro Leu Phe Cys Phe
 385 390 395 400
 Leu Ser Gln Asn Thr Ala Leu Leu Ile Met Ser Val Ser Gly Ala Leu
 405 410 415
 Leu Leu Cys Phe Asn Leu Leu Gly Val Phe Ile Leu Arg Lys Glu Val
 420 425 430
 Ile Phe Pro Ala Arg Ala Ala Ser Leu Thr Glu Thr Ser Leu Ser Thr
 435 440 445
 Glu

<210>576

<211>232

<212>PRT

<213>Chlamydia pneumoniae

<400>576

Leu Ile Phe Leu Leu Phe Met Asp Asn Tyr Leu Leu Gly Ser Leu Ile
 1 5 10 15
 Phe Cys Cys Val Leu Leu Ser Ile Gly Met Cys Thr Ile Phe Val Met
 20 25 30
 Thr Ile Cys Phe Leu Arg Gln Leu Asn Lys Ile Leu Lys Asn Phe His
 35 40 45
 Arg Val Thr Thr Ile Leu Asn Phe Glu Ala Lys Ile Leu Ala Pro Leu
 50 55 60
 Met Leu Gly Lys Lys Leu Leu Cys Gly Trp Leu Lys Lys Arg Lys Asn
 65 70 75 80
 Arg Gly Ser Leu Ser Glu Asp Ile Asp Glu Leu Leu Asp Glu Lys Lys
 85 90 95
 Gln Arg Ser Trp Lys Lys Asn Leu Asp Gln Gly Ile Lys Trp Cys Ala
 100 105 110
 His Trp Ser Ser Phe Gly Lys Cys Phe Val Ile Lys Ile Lys Thr Leu
 115 120 125
 Arg Asp Ile Val Met Phe Arg Asn Asn His Lys Pro Lys Lys Thr Lys
 130 135 140
 Cys Lys Arg Phe Arg Trp Leu Arg Gly Val Leu Phe Gly Gly Phe Ile
 145 150 155 160
 Ala Thr Leu Leu Thr Cys Leu Phe Thr Pro Lys Ser Gly Val Gln Leu
 165 170 175
 Arg Lys Lys Ile Leu Lys Val Lys Asn Ser Gly Ala Lys Lys Ser Arg
 180 185 190
 Val Phe Phe Lys Asn Ser Lys Gln His Thr Lys Ser Phe Val Lys Gln
 195 200 205
 Ala Lys Leu Leu Ala Lys Asn Ile Ser His Glu Leu Gln Asp Phe Lys
 210 215 220
 Lys Gly Ile Leu Asp Asp Lys Asp
 225 230

<210>577

<211>308

<212>PRT

<213>Chlamydia pneumoniae

<400>577

Gly Tyr Asn Leu Leu Gly Leu Arg His Met Lys Gln Met Arg Leu Trp
 1 5 10 15
 Gly Phe Leu Phe Leu Ser Ser Phe Cys Gln Val Ser Tyr Leu Arg Ala
 20 25 30
 Asn Asp Val Leu Leu Pro Leu Ser Gly Ile His Ser Gly Glu Asp Leu
 35 40 45
 Glu Leu Phe Thr Leu Arg Ser Ser Ser Pro Thr Lys Thr Thr Tyr Ser
 50 55 60
 Leu Arg Lys Asp Phe Ile Val Cys Asp Phe Ala Gly Asn Ser Ile His
 65 70 75 80
 Lys Pro Gly Ala Ala Phe Leu Asn Leu Lys Gly Asp Leu Phe Phe Ile
 85 90 95
 Asn Ser Thr Pro Leu Ala Ala Leu Thr Phe Lys Asn Ile His Leu Gly
 100 105 110
 Ala Arg Gly Ala Gly Leu Phe Ser Glu Ser Asn Val Thr Phe Lys Gly
 115 120 125
 Leu His Ser Leu Val Leu Glu Asn Asn Glu Ser Trp Gly Gly Val Leu
 130 135 140
 Thr Thr Ser Gly Asp Leu Ser Phe Ile Asn Asn Thr Ser Val Leu Cys
 145 150 155 160
 Gln Asn Asn Ile Ser Tyr Gly Pro Gly Gly Ala Leu Leu Leu Gln Gly
 165 170 175
 Arg Lys Ser Lys Ala Leu Phe Phe Arg Asp Asn Arg Gly Thr Ile Leu
 180 185 190
 Phe Leu Lys Asn Lys Ala Val Asn Gln Asp Glu Ser His Pro Gly Tyr

195 200 205
 Gly Gly Ala Val Ser Ser Ile Ser Pro Gly Ser Pro Ile Thr Phe Ala
 210 215 220
 Asp Asn Gln Glu Ile Leu Phe Gln Glu Asn Glu Gly Glu Leu Gly Gly
 225 230 235 240
 Ala Ile Tyr Asn Asp Gln Gly Ala Ile Thr Phe Glu Asn Asn Phe Gln
 245 250 255
 Thr Thr Ser Phe Phe Ser Asn Lys Ala Ser Phe Gly Gly Ala Val Tyr
 260 265 270
 Ser Arg Tyr Cys Asn Leu Tyr Ser Gln Trp Gly Asp Thr Leu Phe Thr
 275 280 285
 Lys Asn Ala Ala Ala Lys Val Gly Gly His Pro Cys Gly Leu Cys Ser
 290 295 300
 Tyr Lys Arg Leu
 305
 <210>578
 <211>660
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>578
 Ala Asp Ile His Ala Asp Tyr Val His Ile Arg Asp Cys Lys Gly Ser
 1 5 10 15
 Ile Val Phe Glu Asn Ser Ala Thr Ala Gly Gly Ala Ile Ala Val
 20 25 30
 Asn Ala Val Cys Asp Ile Asn Ala Gln Gly Pro Val Arg Phe Ile Asn
 35 40 45
 Asn Ser Ala Leu Gly Leu Asn Gly Gly Ala Ile Tyr Met Gln Ala Thr
 50 55 60
 Gly Ser Ile Leu Arg Leu His Ala Asn Gln Gly Asp Ile Glu Phe Cys
 65 70 75 80
 Gly Asn Lys Val Arg Ser Gln Phe His Ser His Ile Asn Ser Thr Ser
 85 90 95
 Asn Phe Thr Asn Asn Ala Ile Thr Ile Gln Gly Ala Pro Arg Glu Phe
 100 105 110
 Ser Leu Ser Ala Asn Glu Gly His Arg Ile Cys Phe Tyr Asp Pro Ile
 115 120 125
 Ile Ser Ala Thr Glu Asn Tyr Asn Ser Leu Tyr Ile Asn His Gln Arg
 130 135 140
 Leu Leu Glu Ala Gly Gly Ala Val Ile Phe Ser Gly Ala Arg Leu Ser
 145 150 155 160
 Pro Glu His Lys Lys Glu Asn Lys Asn Lys Thr Ser Ile Ile Asn Gln
 165 170 175
 Pro Val Arg Leu Cys Ser Gly Val Leu Ser Ile Glu Gly Gly Ala Ile
 180 185 190
 Leu Ala Val Arg Ser Phe Tyr Gln Glu Gly Gly Leu Leu Ala Leu Gly
 195 200 205
 Pro Gly Ser Lys Leu Thr Thr Gln Gly Lys Asn Ser Glu Lys Asp Lys
 210 215 220
 Ile Val Ile Thr Asn Leu Gly Phe Asn Leu Glu Asn Leu Asp Ser Ser
 225 230 235 240
 Asp Pro Ala Glu Ile Arg Ala Thr Glu Lys Ala Ser Ile Glu Ile Ser
 245 250 255
 Gly Val Pro Arg Val Tyr Gly His Thr Glu Ser Phe Tyr Glu Asn His
 260 265 270
 Glu Tyr Ala Ser Lys Pro Tyr Thr Thr Ser Ile Ile Leu Ser Ala Lys
 275 280 285
 Lys Leu Val Thr Ala Pro Ser Arg Pro Glu Lys Asp Ile Gln Asn Leu
 290 295 300
 Ile Ile Ala Glu Ser Glu Tyr Met Gly Tyr Gly Tyr Gln Gly Ser Trp
 305 310 315 320
 Glu Phe Ser Trp Ser Pro Asn Asp Thr Lys Glu Lys Lys Thr Ile Ile
 325 330 335
 Ala Ser Trp Thr Pro Thr Gly Glu Phe Ser Leu Asp Pro Lys Arg Arg
 340 345 350

Gly Ser Phe Ile Pro Thr Thr Leu Trp Ser Thr Phe Ser Gly Leu Asn
 355 360 365
 Ile Ala Ser Asn Ile Val Asn Asn Asn Tyr Leu Asn Asn Ser Glu Val
 370 375 380
 Ile Pro Leu Gln His Leu Cys Val Phe Gly Gly Pro Val Tyr Gln Ile
 385 390 395 400
 Met Glu Gln Asn Pro Lys Gln Ser Ser Asn Asn Leu Leu Val Gln His
 405 410 415
 Ala Gly His Asn Val Gly Ala Arg Ile Pro Phe Ser Phe Asn Thr Ile
 420 425 430
 Leu Ser Ala Ala Leu Thr Gln Leu Phe Ser Ser Ser Ser Gln Gln Asn
 435 440 445
 Val Ala Asp Lys Ser His Ala Gln Ile Leu Ile Gly Thr Val Ser Leu
 450 455 460
 Asn Lys Ser Trp Gln Ala Leu Ser Leu Arg Ser Ser Phe Ser Tyr Thr
 465 470 475 480
 Glu Asp Ser Gln Val Met Lys His Val Phe Pro Tyr Lys Gly Thr Ser
 485 490 495
 Arg Gly Ser Trp Arg Asn Tyr Gly Trp Ser Gly Ser Val Gly Met Ser
 500 505 510
 Tyr Ala Tyr Pro Lys Gly Ile Arg Tyr Leu Lys Met Thr Pro Phe Val
 515 520 525
 Asp Leu Gln Tyr Thr Lys Leu Val Gln Asn Pro Phe Val Glu Thr Gly
 530 535 540
 Tyr Asp Pro Arg Tyr Phe Ser Ser Ser Glu Met Thr Asn Leu Ser Leu
 545 550 555 560
 Pro Ile Gly Ile Ala Leu Glu Met Arg Phe Ile Gly Ser Arg Ser Ser
 565 570 575
 Leu Phe Leu Gln Val Ser Thr Ser Tyr Ile Lys Asp Leu Arg Arg Val
 580 585 590
 Asn Pro Gln Ser Ser Ala Ser Leu Val Leu Asn His Tyr Thr Trp Asp
 595 600 605
 Ile Gln Gly Val Pro Leu Gly Lys Glu Ala Leu Asn Ile Thr Leu Asn
 610 615 620
 Ser Thr Ile Lys Tyr Lys Ile Val Thr Ala Tyr Met Gly Ile Ser Ser
 625 630 635 640
 Thr Gln Arg Glu Gly Ser Asn Leu Ser Ala Asn Ala His Ala Gly Leu
 645 650 655
 Ser Leu Ser Phe
 660

<210>579

<211>609

<212>PRT

<213>Chlamydia pneumoniae

<400>579

Phe Ile His Leu Ile Tyr Leu Ser Leu Ile Glu Phe Val Asn Ile Ser
 1 5 10 15
 Asp Arg Phe Ser Ser Met Lys Trp Leu Pro Ala Thr Ala Val Phe Ala
 20 25 30
 Ala Val Leu Pro Ala Leu Thr Ala Phe Gly Asp Pro Ala Ser Val Glu
 35 40 45
 Ile Ser Thr Ser His Thr Gly Ser Gly Asp Pro Thr Ser Asp Ala Ala
 50 55 60
 Leu Thr Gly Phe Thr Gln Ser Ser Thr Glu Thr Asp Gly Thr Thr Tyr
 65 70 75 80
 Thr Ile Val Gly Asp Ile Thr Phe Ser Thr Phe Thr Asn Ile Pro Val
 85 90 95
 Pro Val Val Thr Pro Asp Ala Asn Asp Ser Ser Ser Asn Ser Ser Lys
 100 105 110
 Gly Gly Ser Ser Ser Ser Gly Ala Thr Ser Leu Ile Arg Ser Ser Asn
 115 120 125
 Leu His Ser Asp Phe Asp Phe Thr Lys Asp Ser Val Leu Asp Leu Tyr
 130 135 140
 His Leu Phe Phe Pro Ser Ala Ser Asn Thr Leu Asn Pro Ala Leu Leu

PCT/DV98/01890

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<210>580
<211>1146
<212>PRT
<213>Chlamydia pneumoniae
<400>580
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Leu Tyr Leu Glu Ser His Arg Xaa Leu Ser Phe Glu Asn Asn Glu Cys
 1 5 10 15
 Gln Asn Gln Gly Gly Ala Tyr Val Thr Lys Thr Phe Gln Cys Ser
 20 25 30
 Asp Ser His Arg Leu Gln Phe Thr Ser Asn Lys Ala Ala Asp Glu Gly
 35 40 45
 Gly Gly Leu Tyr Cys Gly Asp Asp Val Thr Leu Thr Asn Leu Thr Gly
 50 55 60
 Lys Thr Leu Phe Gln Glu Asn Ser Ser Glu Lys His Gly Gly Gly Leu
 65 70 75 80
 Ser Leu Ala Ser Gly Lys Ser Leu Thr Met Thr Ser Leu Glu Ser Phe
 85 90 95
 Cys Leu Asn Ala Asn Thr Ala Lys Glu Asn Gly Gly Gly Ala Asn Val
 100 105 110
 Pro Glu Asn Ile Val Leu Thr Phe Thr Tyr Thr Pro Thr Pro Asn Glu
 115 120 125
 Pro Ala Pro Val Gln Gln Pro Val Tyr Gly Glu Ala Leu Val Thr Gly
 130 135 140
 Asn Thr Ala Thr Lys Ser Gly Gly Gly Ile Tyr Thr Lys Asn Ala Ala
 145 150 155 160
 Phe Ser Asn Leu Ser Ser Val Thr Phe Asp Gln Asn Thr Ser Ser Glu
 165 170 175
 Asn Gly Gly Ala Leu Leu Thr Gln Lys Ala Ala Asp Lys Thr Asp Cys
 180 185 190
 Ser Phe Thr Tyr Ile Thr Asn Val Asn Ile Thr Asn Asn Thr Ala Thr
 195 200 205
 Gly Asn Gly Gly Gly Ile Ala Gly Gly Lys Ala His Phe Asp Arg Ile
 210 215 220
 Asp Asn Leu Thr Val Gln Ser Asn Gln Ala Lys Lys Gly Gly Gly Val
 225 230 235 240
 Tyr Leu Glu Asp Ala Leu Ile Leu Glu Lys Val Ile Thr Gly Ser Val
 245 250 255
 Ser Gln Asn Thr Ala Thr Glu Ser Gly Gly Gly Ile Tyr Ala Lys Asp
 260 265 270
 Ile Gln Leu Gln Ala Leu Pro Gly Ser Phe Thr Ile Thr Asp Asn Lys
 275 280 285
 Val Glu Thr Ser Leu Thr Thr Ser Thr Asn Leu Tyr Gly Gly Gly Ile
 290 295 300
 Tyr Ser Ser Gly Ala Val Thr Leu Thr Asn Ile Ser Gly Thr Phe Gly
 305 310 315 320
 Ile Thr Gly Asn Ser Val Ile Asn Thr Ala Thr Ser Gln Asp Ala Asp
 325 330 335
 Ile Gln Gly Gly Gly Ile Tyr Ala Thr Thr Ser Leu Ser Ile Asn Gln
 340 345 350
 Cys Asn Thr Pro Ile Leu Phe Ser Asn Asn Ser Ala Ala Thr Lys Lys
 355 360 365
 Thr Ser Thr Thr Lys Gln Ile Ala Gly Gly Ala Ile Phe Ser Ala Ala
 370 375 380
 Val Thr Ile Glu Asn Asn Ser Gln Pro Ile Ile Phe Leu Asn Asn Ser
 385 390 395 400
 Ala Lys Ser Glu Ala Thr Thr Ala Ala Thr Ala Gly Asn Lys Asp Ser
 405 410 415
 Cys Gly Gly Ala Ile Ala Ala Asn Ser Val Thr Leu Thr Asn Asn Pro
 420 425 430
 Glu Ile Thr Phe Lys Gly Asn Tyr Ala Glu Thr Gly Gly Ala Ile Gly
 435 440 445
 Cys Ile Asp Leu Thr Asn Gly Ser Pro Pro Arg Lys Val Ser Ile Ala
 450 455 460
 Asp Asn Gly Ser Val Leu Phe Gln Asp Asn Ser Ala Leu Asn Arg Gly
 465 470 475 480
 Gly Ala Ile Tyr Gly Glu Thr Ile Asp Ile Ser Arg Thr Gly Ala Thr
 485 490 495
 Phe Ile Gly Asn Ser Ser Lys His Asp Gly Ser Ala Ile Cys Cys Ser
 500 505 510

Thr Ala Leu Thr Leu Ala Pro Asn Ser Gln Leu Ile Phe Glu Asn Asn
 515 520 525
 Lys Val Thr Glu Thr Thr Ala Thr Thr Lys Ala Ser Ile Asn Asn Leu
 530 535 540
 Gly Ala Ala Ile Tyr Gly Asn Asn Glu Thr Ser Asp Val Thr Ile Ser
 545 550 555 560
 Leu Ser Ala Glu Asn Gly Ser Ile Phe Phe Lys Asn Asn Leu Cys Thr
 565 570 575
 Ala Thr Asn Lys Tyr Cys Ser Ile Ala Gly Asn Val Lys Phe Thr Ala
 580 585 590
 Ile Glu Ala Ser Ala Gly Lys Ala Ile Ser Phe Tyr Asp Ala Val Asn
 595 600 605
 Val Ser Thr Lys Xaa Thr Asn Ala Gln Glu Leu Lys Leu Asn Glu Lys
 610 615 620
 Ala Thr Ser Thr Gly Thr Ile Leu Phe Ser Gly Glu Leu His Glu Asn
 625 630 635 640
 Lys Ser Tyr Ile Pro Gln Lys Val Thr Phe Ala His Gly Asn Leu Ile
 645 650 655
 Leu Gly Lys Asn Ala Glu Leu Ser Val Val Ser Phe Thr Gln Ser Pro
 660 665 670
 Gly Thr Thr Ile Thr Met Gly Pro Gly Ser Val Leu Ser Asn His Ser
 675 680 685
 Lys Glu Ala Gly Gly Ile Ala Ile Asn Asn Val Ile Ile Asp Phe Ser
 690 695 700
 Glu Ile Val Pro Thr Lys Asp Asn Ala Thr Val Ala Pro Pro Thr Leu
 705 710 715 720
 Lys Leu Val Ser Arg Thr Asn Ala Asp Ser Lys Asp Lys Ile Asp Ile
 725 730 735
 Thr Gly Thr Val Thr Leu Leu Asp Pro Asn Gly Asn Leu Tyr Gln Asn
 740 745 750
 Ser Tyr Leu Gly Glu Asp Arg Asp Ile Thr Leu Phe Asn Ile Asp Asn
 755 760 765
 Ser Ala Ser Gly Ala Val Thr Ala Thr Asn Val Thr Leu Gln Gly Asn
 770 775 780
 Leu Gly Ala Lys Lys Gly Tyr Leu Gly Thr Trp Asn Leu Asp Pro Asn
 785 790 795 800
 Ser Ser Gly Ser Lys Ile Ile Leu Lys Trp Thr Phe Asp Lys Tyr Leu
 805 810 815
 Arg Trp Pro Tyr Ile Pro Arg Asp Asn His Phe Tyr Ile Asn Ser Ile
 820 825 830
 Trp Gly Ala Gln Asn Ser Leu Val Thr Val Lys Gln Gly Ile Leu Gly
 835 840 845
 Asn Met Leu Asn Asn Ala Arg Phe Glu Asp Pro Ala Phe Asn Asn Phe
 850 855 860
 Trp Ala Ser Ala Ile Gly Ser Phe Leu Arg Lys Glu Val Ser Arg Asn
 865 870 875 880
 Ser Asp Ser Phe Thr Tyr His Gly Arg Gly Tyr Thr Ala Ala Val Asp
 885 890 895
 Ala Lys Pro Arg Gln Glu Phe Ile Leu Gly Ala Ala Phe Ser Gln Val
 900 905 910
 Phe Gly His Ala Glu Ser Glu Tyr His Leu Asp Asn Tyr Lys His Lys
 915 920 925
 Gly Ser Gly His Ser Thr Gln Ala Ser Leu Tyr Ala Gly Asn Ile Phe
 930 935 940
 Tyr Phe Pro Ala Ile Arg Ser Arg Pro Ile Leu Phe Gln Gly Val Ala
 945 950 955 960
 Thr Tyr Gly Tyr Met Gln His Asp Thr Thr Thr Tyr Tyr Pro Ser Ile
 965 970 975
 Glu Glu Lys Asn Met Ala Asn Trp Asp Ser Ile Ala Trp Leu Phe Asp
 980 985 990
 Leu Arg Phe Ser Val Asp Leu Lys Glu Pro Gln Pro His Ser Thr Ala
 995 1000 1005
 Arg Leu Thr Phe Tyr Thr Glu Ala Glu Tyr Thr Arg Ile Arg Gln Glu
 1010 1015 1020

Lys Phe Thr Glu Leu Asp Tyr Asp Pro Arg Ser Phe Ser Ala Cys Ser
 1025 1030 1035 1040
 Tyr Gly Asn Leu Ala Ile Pro Thr Gly Phe Ser Val Asp Gly Ala Leu
 1045 1050 1055
 Ala Trp Arg Glu Ile Ile Leu Tyr Asn Lys Val Ser Ala Ala Tyr Leu
 1060 1065 1070
 Pro Val Ile Leu Arg Asn Asn Pro Lys Ala Thr Tyr Glu Val Leu Ser
 1075 1080 1085
 Thr Lys Glu Lys Gly Asn Val Val Asn Val Leu Pro Thr Arg Asn Ala
 1090 1095 1100
 Ala Arg Ala Glu Val Ser Ser Gln Ile Tyr Leu Gly Ser Tyr Trp Thr
 1105 1110 1115 1120
 Leu Tyr Gly Thr Tyr Thr Ile Asp Ala Ser Met Asn Thr Leu Val Gln
 1125 1130 1135
 Met Ala Asn Gly Gly Ile Arg Phe Val Phe
 1140 1145

<210>581

<211>289

<212>PRT

<213>Chlamydia pneumoniae

<400>581

Asn Asn Arg Ser Ser Tyr Gln Thr Ala Phe Val Met His Lys Val Ile
 1 5 10 15
 Val Xaa Ile Phe Leu Thr Leu Tyr Ser Leu Lys Ser Tyr Gly Asn Asp
 20 25 30
 Val Ile Asp Lys Pro His Val Leu Val Ser Ile Ala Pro Tyr Lys Phe
 35 40 45
 Leu Val Glu Gln Ile Ala Glu Glu Thr Cys Phe Val Tyr Ala Ile Val
 50 55 60
 Thr Asn His Tyr Asp Pro His Thr Tyr Glu Leu Pro Pro Gln Gln Ile
 65 70 75 80
 Lys Glu Leu Arg Gln Gly Asp Leu Trp Phe Arg Ile Gly Glu Ala Phe
 85 90 95
 Glu Lys Thr Cys Glu Arg Asn Leu Thr Cys Gln Gln Val Asp Leu Ser
 100 105 110
 Gln Asn Val Ser Leu Ile Gln Gly Lys Pro Cys Cys Asn Gln His Thr
 115 120 125
 Thr Asn Tyr Asp Thr His Thr Trp Leu Ser Pro Lys Asn Leu Lys Val
 130 135 140
 Gln Val Glu Thr Ile Val Thr Thr Leu Ser Lys Lys Tyr Pro Gln His
 145 150 155 160
 Ala Thr Leu Tyr Gln Ser Asn Gly Glu Lys Leu Leu Leu Ala Leu Asp
 165 170 175
 Gln Leu Asn Glu Glu Ile Leu Thr Ile Thr Ser Lys Ala Lys Gln Arg
 180 185 190
 His Ile Leu Val Ser His Gly Ala Phe Gly Tyr Phe Cys Arg Asp Tyr
 195 200 205
 Asn Phe Ser Gln His Thr Ile Glu Lys Ser Ser His Val Glu Pro Ser
 210 215 220
 Pro Lys Asp Val Ala Arg Val Phe Arg Asp Ile Glu Gln Tyr Lys Ile
 225 230 235 240
 Ser Ser Val Ile Leu Leu Glu Tyr Ser Gly Arg Arg Ser Ser Ala Met
 245 250 255
 Leu Ala Asp Arg Phe His Met His Thr Val Asn Leu Asp Pro Tyr Ala
 260 265 270
 Glu Asn Ile Leu Val Asn Leu Lys Thr Ile Ala Thr Thr Phe Ser Ser
 275 280 285
 Leu

<210>582

<211>352

<212>PRT

<213>Chlamydia pneumoniae

<400>582

Leu Lys Lys Asp Lys Asn Val Ile Met Phe Val Asp Gln Ile Thr Leu
 1 5 10 15
 Glu Leu Arg Ala Gly Lys Gly Gly Asn Gly Val Val Ala Trp Arg Lys
 20 25 30
 Glu Lys Tyr Leu Pro Lys Gly Gly Pro Tyr Gly Gly Asn Gly Gly Asn
 35 40 45
 Gly Gly Ser Val Ile Ile Glu Ala Thr Thr Ser Val Tyr Ser Phe Glu
 50 55 60
 Ala Tyr Arg Asn Ile Arg Phe Leu Lys Ala Pro Asp Gly Gln Ser Gly
 65 70 75 80
 Ala Thr Asn Asn Arg Thr Gly Arg Ser Gly Lys Asp Leu Ile Val Ser
 85 90 95
 Val Pro Thr Gly Thr Leu Leu Arg Asp Ala Glu Thr Gly Glu Ile Leu
 100 105 110
 His Asp Phe Thr Val Asp Gly Glu Arg Leu Leu Val Ser Gln Gly Gly
 115 120 125
 Lys Gly Gly Lys Gly Asn Thr Phe Phe Lys Thr Ser Val Asn Arg Ala
 130 135 140
 Pro Thr Lys Ala Thr Pro Gly Lys Pro Gly Glu Ile Arg Gln Val Glu
 145 150 155 160
 Leu Glu Leu Lys Leu Ile Ala Asp Ile Gly Leu Val Gly Phe Pro Asn
 165 170 175
 Ala Gly Lys Ser Thr Leu Phe Asn Thr Leu Ala His Thr Glu Val Lys
 180 185 190
 Val Gly Ala Tyr Pro Phe Thr Thr Leu Ala Pro Ser Leu Gly Leu Val
 195 200 205
 Leu Cys Lys Asp Arg Leu Tyr Gln Lys Pro Trp Ile Ile Ala Asp Ile
 210 215 220
 Pro Gly Ile Ile Glu Gly Ala His Gln Asn Lys Gly Leu Gly Leu Asp
 225 230 235 240
 Phe Leu Arg His Ile Glu Arg Thr Leu Leu Leu Leu Phe Val Ile Asp
 245 250 255
 Val Ser Lys Arg Glu Arg Asn Ser Pro Glu Glu Asp Leu Glu Thr Leu
 260 265 270
 Ile His Glu Leu His Ser His Gln Pro Asp Phe Glu Lys Lys Asp Met
 275 280 285
 Leu Val Ala Leu Asn Lys Ile Asp Asp Leu Leu Pro Asp Glu Gln Glu
 290 295 300
 Glu Cys Leu Gln Ser Phe Gln Lys Arg Phe Pro Ser Tyr Thr Phe Val
 305 310 315 320
 Leu Ile Ser Gly Leu Thr Gly Glu Gly Val Asp Gly Leu Tyr Arg Phe
 325 330 335
 Phe Thr Gln Asp Ser Leu Tyr Asn Xaa Thr Pro Ser Ala Met Ile Ser
 340 345 350

<210>583

<211>84

<212>PRT

<213>Chlamydia pneumoniae

<400>583

Met Ala His Lys Lys Gly Gln Gly Ala Ser Arg Asn Gly Arg Asp Ser
 1 5 10 15
 Lys Ser Lys Arg Leu Gly Val Lys Val Gly Ala Gly Gln Lys Val Ser
 20 25 30
 Thr Gly Ser Ile Leu Val Arg Gln Arg Gly Thr Arg Trp Asn Pro Ala
 35 40 45
 Gln Asn Val Gly Arg Gly Arg Asp Asp Thr Leu Phe Ala Leu Val Asp
 50 55 60
 Gly Ile Val Val Met Lys Lys Thr Asn Arg Thr Tyr Ile Ser Val Val
 65 70 75 80
 Pro Glu Gln Leu

<210>584

<211>107

<212>PRT

<213>Chlamydia pneumoniae

<400>584

Leu Met Glu Pro Tyr Ala Val Ile Gln Thr Gly Ser Lys Gln Tyr Gln
 1 5 10 15
 Val Arg Ser Gly Asp Val Ile Asp Val Glu Leu Leu Gly Glu Val Ala
 20 25 30
 Ser Asp Lys Glu Val Ile Phe Gln Asp Val Leu Phe Val Phe Asp Gly
 35 40 45
 Thr Lys Ala Ser Leu Gly Ser Pro Thr Ile Ala Asn Ala Gln Val Lys
 50 55 60
 Ala Glu Tyr Leu Ser His Val Lys Gly Glu Lys Val Val Ala Tyr Lys
 65 70 75 80
 Tyr Lys Lys Arg Lys Asn Tyr His Arg Lys His Gly His Arg Gln Lys
 85 90 95
 Tyr Leu Arg Val Lys Ile Arg Glu Ile Leu Ile
 100 105

<210>585

<211>199

<212>PRT

<213>Chlamydia pneumoniae

<400>585

Val Asn Phe Arg Asn Phe Val Val Ser Ser Val Lys Glu Ile Leu Lys
 1 5 10 15
 Lys Asn Ile Tyr Gln Val Val Met Asp Arg Asp Asn Glu Val Pro Leu
 20 25 30
 Pro Lys Pro Lys Trp Ile Tyr Arg Thr Gly Ile Gly Gln Asp Ser His
 35 40 45
 Arg Phe Leu Pro Glu Ser Ser Thr Lys Pro Cys Ile Leu Gly Gly Ile
 50 55 60
 Ile Phe Asp His Cys Pro Gly Phe Gln Ala Asn Ser Asp Gly Asp Ile
 65 70 75 80
 Ile Phe His Ala Ile Cys Asn Ala Ile Ser Ser Val Thr Asn Lys Ile
 85 90 95
 Ile Leu Gly Lys Val Ala Asp Glu Leu Leu Gln Thr Arg Gly Ile Thr
 100 105 110
 Asp Ser Gly Ile Tyr Leu Glu Glu Ala Leu Lys Ser Leu Lys Pro Asn
 115 120 125
 Gln Lys Ile Ser His Val Ala Ile Thr Ile Glu Gly Ser Arg Pro Lys
 130 135 140
 Phe Leu Cys Lys Leu Ser Ala Leu Arg Gln Asn Ile Ala Gln Val Met
 145 150 155 160
 Asn Leu Thr Pro Thr Asp Ile Gly Ile Thr Ala Thr Ser Gly Glu Gly
 165 170 175
 Leu Ser Asp Phe Gly Cys Gly Asp Gly Val Gln Cys Phe Cys Val Leu
 180 185 190
 Thr Val Met Glu Tyr Cys Asp
 195

<210>586

<211>246

<212>PRT

<213>Chlamydia pneumoniae

<400>586

Ile Pro Ala Lys Leu Asn Ser Phe Phe Pro Asp Lys Asp Pro Lys Ile
 1 5 10 15
 Thr Leu Tyr Asp Ala Ile Gln Glu Tyr Arg Pro Gln Ile Pro Ile Glu
 20 25 30
 Leu Phe Ala Glu Ser Val Phe Pro Leu Leu Pro Arg Phe Tyr Ser Ile
 35 40 45
 Ala Ser Ser Pro Asp Leu His Pro Lys Ser Ile Glu Leu Leu Val Lys
 50 55 60
 His Val Ser Tyr Pro Gly Lys Tyr Gln Lys Arg Phe Gly Val Cys Ser
 65 70 75 80
 Ser Phe Leu Cys Ser Glu Leu Gln Val Asn Asp Ser Ala Tyr Ile Phe
 85 90 95

Val Gln Pro Thr Lys His Phe Thr Leu Ser Thr Gln Thr Glu Gly Lys
 100 105 110
 Pro Leu Val Met Ile Gly Ala Gly Thr Gly Ile Ala Pro Tyr Lys Ala
 115 120 125
 Phe Leu Glu Glu Arg Leu Phe Asn Lys Asp Pro Gly Asn Asn Leu Leu
 130 135 140
 Phe Phe Gly Glu Arg Lys Glu Lys Val Asn Phe Tyr Tyr Arg Glu Phe
 145 150 155 160
 Trp Asn His Ala Glu Glu Gly Lys Leu Lys Leu Phe Leu Ala Phe
 165 170 175
 Ser Arg Glu Arg Asp Gln Lys Val Tyr Val Gln Asp Leu Leu Arg Ile
 180 185 190
 Gln Lys Asp Glu Val Arg Lys Ala Tyr Glu Glu Gly Gly Phe Phe Phe
 195 200 205
 Val Cys Gly Arg Lys Val Leu Gly Ile Glu Val Lys His Ala Leu Glu
 210 215 220
 Glu Ile Leu Gly Lys Asp Thr Leu Ala Ser Leu Arg Lys Glu His Arg
 225 230 235 240
 Tyr Val Val Asp Val Tyr
 245

<210>587

<211>85

<212>PRT

<213>Chlamydia pneumoniae

<400>587

Lys Met Tyr Leu Gln Glu Lys Phe Lys Ala Gln Gln Val Pro Leu Val
 1 5 10 15
 Leu Arg Glu Leu Leu Ser Cys Ser Asp Ser Ile Asn Asp Ser Asp Pro
 20 25 30
 Ile Tyr Arg Met Val Phe Asp Ser Asn Asp Thr Thr Ile Ser Tyr Lys
 35 40 45
 Val Gly Asp Ala Leu Gly Val Leu Pro Glu Asn Ser Lys Glu Val Ser
 50 55 60
 Glu His Val Leu Gln Leu Leu Arg Leu Phe Pro Asn Asp Pro Cys Gln
 65 70 75 80
 Arg Lys Lys Asn Phe
 85

<210>588

<211>118

<212>PRT

<213>Chlamydia pneumoniae

<400>588

Lys Lys Phe Lys Lys Arg Leu Leu Arg Ser Lys Gly Cys Met Lys Gln
 1 5 10 15
 Gln Lys Gln Lys Ile Arg Ile Arg Leu Lys Gly Phe Asp Gln Gly Gln
 20 25 30
 Leu Asp Arg Ser Thr Ala Asp Ile Val Glu Thr Ala Lys Arg Thr Gly
 35 40 45
 Ala Arg Val Val Gly Pro Ile Pro Leu Pro Thr Lys Arg Glu Val Tyr
 50 55 60
 Thr Val Leu Arg Ser Pro His Val Asp Lys Lys Ser Arg Glu Gln Phe
 65 70 75 80
 Glu Ile Arg Thr His Lys Arg Leu Val Asp Ile Leu Asp Pro Thr Gly
 85 90 95
 Lys Thr Ile Asp Ala Leu Lys Met Leu Ala Leu Pro Ala Gly Val Asp
 100 105 110
 Ile Lys Ile Lys Ala Ala
 115

<210>589

<211>651

<212>PRT

<213>Chlamydia pneumoniae

<400>589

Ser His Glu Gly Gly Ala Thr Met Asp Trp Met Ala Gln Glu Gln Glu

1	5	10	15
Arg Gly Ile Thr	Ile Thr Ser Ala Ala Thr Thr	Val Phe Trp Leu Gly	
	20	25	30
Ala Lys Ile Asn	Ile Ile Asp Thr Pro Gly His	Val Asp Phe Thr Ile	
	35	40	45
Glu Val Glu Arg	Ser Leu Arg Val Leu Asp Gly	Ala Val Ala Val Phe	
	50	55	60
Asp Ala Val Ser	Gly Val Glu Pro Gln Ser Glu Thr	Val Trp Arg Gln	
	65	70	75
Ala Asp Lys Tyr	Gly Val Pro Arg Ile Ala Phe	Val Asn Lys Met Asp	
	85	90	95
Arg Met Gly Ala	Asp Tyr Phe Ala Ala Val Glu	Ser Met Lys Glu Lys	
	100	105	110
Leu Gly Ala Asn	Ala Phe Pro Val His Cys Pro	Ile Gly Ser Glu Ser	
	115	120	125
Gln Phe Val Gly	Met Val Asp Leu Ile Ser Gln	Lys Ala Leu Tyr Phe	
	130	135	140
Leu Asp Asp Thr	Leu Gly Ala Lys Trp Glu Glu	Lys Glu Ile Ser Glu	
	145	150	155
Asp Leu Lys Glu	Arg Cys Ala Glu Leu Arg Ala	Asn Leu Leu Glu Glu	
	165	170	175
Leu Ala Thr Ile	Asp Glu Ser Asn Glu Ala Phe	Met Met Lys Val Leu	
	180	185	190
Glu Asp Pro Asp	Ser Ile Thr Glu Asp Glu Ile	His Gln Val Met Arg	
	195	200	205
Lys Gly Val Ile	Glu Asn Lys Ile Asn Pro Val	Leu Cys Gly Thr Ala	
	210	215	220
Phe Lys Asn Lys	Gly Val Gln Gln Leu Leu Asn	Val Ile Val Lys Trp	
	225	230	235
Leu Pro Ser Pro	Leu Asp Arg Gly Asn Ile Arg	Gly Ile Asn Leu Lys	
	245	250	255
Thr Asp Gln Glu	Ile Ser Leu Glu Pro Arg Arg	Asp Gly Pro Leu Ala	
	260	265	270
Ala Leu Ala Phe	Lys Ile Met Thr Asp Pro Tyr	Val Gly Arg Ile Thr	
	275	280	285
Phe Ile Arg Ile	Tyr Ser Gly Thr Leu Lys Lys	Gly Ser Ala Ile Leu	
	290	295	300
Asn Ser Thr Lys	Asp Lys Lys Glu Arg Ile Ser	Arg Leu Leu Glu Met	
	305	310	315
His Ala Asn Glu	Arg Thr Asp Arg Asp Glu Phe	Thr Val Gly Asp Ile	
	325	330	335
Gly Ala Cys Val	Gly Leu Lys Phe Ser Val Thr	Gly Asp Thr Leu Cys	
	340	345	350
Asp Asp Asn Gln	Glu Ile Val Leu Glu Arg Ile	Glu Phe Pro Asp Pro	
	355	360	365
Val Ile Asp Met	Ala Ile Glu Pro Lys Ser Lys	Gly Asp Arg Glu Lys	
	370	375	380
Leu Ala Gln Ala	Leu Ser Ser Leu Ser Glu Glu	Asp Pro Thr Phe Arg	
	385	390	395
Val Ser Thr Asn	Glu Glu Thr Gly Gln Thr Ile	Ile Ser Gly Met Gly	
	405	410	415
Glu Leu His Leu	Asp Ile Leu Arg Asp Arg Met	Ile Arg Glu Phe Lys	
	420	425	430
Val Glu Ala Asn	Val Gly Lys Pro Gln Val Ser	Tyr Lys Glu Thr Ile	
	435	440	445
Thr Val Ser Gly	Asn Ser Glu Thr Lys Tyr Val	Lys Gln Ser Gly Gly	
	450	455	460
Arg Gly Gln Tyr	Ala His Val Cys Leu Glu Ile	Glu Pro Asn Glu Pro	
	465	470	475
Gly Lys Gly Asn	Glu Val Val Ser Lys Ile Val	Gly Gly Val Ile Pro	
	485	490	495
Lys Glu Tyr Ile	Pro Ala Val Ile Lys Gly Ile	Glu Glu Gly Leu Asn	
	500	505	510
Thr Gly Val Leu	Ala Gly Tyr Gly Leu Val	Asp Val Lys Val Ser Ile	

515 520 525
 Val Phe Gly Ser Tyr His Glu Val Asp Ser Ser Glu Met Ala Phe Lys
 530 535 540
 Ile Cys Gly Ser Met Ala Val Lys Asp Ala Cys Arg Lys Ala Lys Pro
 545 550 555 560
 Val Ile Leu Glu Pro Ile Met Lys Val Ala Val Ile Thr Pro Glu Asp
 565 570 575
 His Leu Gly Asp Val Ile Gly Asp Leu Asn Arg Arg Arg Gly Lys Ile
 580 585 590
 Leu Gly Gln Glu Ser Ser Arg Gly Met Ala Gln Val Asn Ala Glu Val
 595 600 605
 Pro Leu Ser Glu Met Phe Gly Tyr Thr Thr Ser Leu Arg Ser Leu Thr
 610 615 620
 Ser Gly Arg Ala Thr Ser Thr Met Glu Pro Ala Phe Phe Ala Lys Val
 625 630 635 640
 Pro Gln Lys Ile Gln Glu Glu Ile Val Lys Lys
 645 650

<210>590

<211>82

<212>PRT

<213>Chlamydia pneumoniae

<400>590

Leu Asn Tyr Gly Glu Asn Asn Lys Phe Met Ser Asn Gln Glu Phe Asp
 1 5 10 15
 Leu Ser Ala Ile Arg Asn Ile Gly Ile Met Ala His Ile Asp Ala Gly
 20 25 30
 Lys Thr Thr Thr Thr Glu Arg Ile Leu Phe Tyr Ala Gly Arg Thr His
 35 40 45
 Lys Ile Gly Glu Val Met Lys Ala Glu Leu Pro Trp Thr Gly Trp Pro
 50 55 60
 Arg Ser Lys Lys Glu Glu Leu Arg Leu Pro Leu Leu Gln Leu Leu Ser
 65 70 75 80
 Ser Gly

<210>591

<211>159

<212>PRT

<213>Chlamydia pneumoniae

<400>591

Met Tyr Met Ser Arg Arg His Ser Ala Glu Lys Arg Asp Ile Pro Gly
 1 5 10 15
 Asp Pro Ile Tyr Gly Ser Val Ile Leu Glu Lys Phe Ile Asn Lys Val
 20 25 30
 Met Met His Gly Lys Lys Ser Val Ala Arg Lys Ile Val Tyr Ser Ala
 35 40 45
 Leu Glu Arg Phe Gly Lys Lys Leu Asn Leu Glu Asn Val Leu Glu Gly
 50 55 60
 Phe Gly Glu Ala Leu Glu Asn Ala Lys Pro Ile Leu Glu Val Arg Ser
 65 70 75 80
 Arg Arg Val Gly Gly Ala Thr Tyr Gln Val Pro Val Glu Val Ala Ser
 85 90 95
 Glu Arg Arg Asn Cys Leu Ala Met Gln Trp Ile Ile Lys His Ala Arg
 100 105 110
 Ser Lys Pro Gly Lys Ser Met Glu Val Gly Leu Ala Thr Glu Leu Ile
 115 120 125
 Asp Cys Phe Asn Lys Gln Gly Ala Thr Ile Lys Lys Arg Glu Asp Thr
 130 135 140
 His Arg Met Ala Glu Ala Asn Lys Ala Phe Ala His Tyr Lys Trp
 145 150 155

<210>592

<211>146

<212>PRT

<213>Chlamydia pneumoniae

<400>592

Leu Pro Thr Lys Arg Ala Leu Leu Tyr Ile Ser Met Leu Val Val Val
 1 5 10 15
 Arg Leu Lys Arg Glu Glu Tyr Met Pro Thr Ile Asn Gln Leu Ile Arg
 20 25 30
 Lys Arg Arg Lys Ser Ser Leu Ala Arg Lys Lys Ser Pro Ala Leu Gln
 35 40 45
 Lys Cys Pro Gln Lys Arg Gly Val Cys Leu Gln Val Lys Thr Lys Thr
 50 55 60
 Pro Lys Lys Pro Asn Ser Ala Leu Arg Lys Val Ala Trp Val Arg Leu
 65 70 75 80
 Ser Asn Gly Gln Glu Val Ile Ala Tyr Ile Gly Gly Glu Gly His Asn
 85 90 95
 Leu Gln Glu His Ser Ile Val Leu Ile Gln Gly Gly Arg Val Lys Asp
 100 105 110
 Leu Pro Gly Val Arg Tyr His Ile Val Arg Gly Thr Leu Asp Cys Ala
 115 120 125
 Ala Val Lys Asn Arg Lys Gln Ser Arg Ser Arg Tyr Gly Ala Lys Arg
 130 135 140
 Pro Lys
 145
 <210>593
 <211>268
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>593
 Gly Cys Met Trp Arg Val Val Leu Arg Phe Leu Ile Ile Phe Ile Leu
 1 5 10 15
 Gly Arg Ala Val Phe Pro Leu Arg Ala Ser Glu Ser Phe Ser Trp Glu
 20 25 30
 Thr Ser Thr Cys Leu Thr Val Leu Gly Ile Pro Phe Ile Asp Ile Ile
 35 40 45
 Leu Thr Thr Asn Glu Asp Phe Val Ala Gln Cys Gly Leu Gln Ile Gly
 50 55 60
 Thr Ile Ser Ser Thr Asn Asn Ala Lys Ile Lys Glu Ile Phe Leu Ile
 65 70 75 80
 Tyr Lys Glu Lys Phe Pro Glu Ala Ser Ile Ser Phe Lys Arg Lys Glu
 85 90 95
 Pro Leu Asn Leu Ser Gln Ser His Leu Ser Asp Leu Gly Ile Leu Cys
 100 105 110
 Met Arg Asn Gly Glu Thr Tyr Ala Glu Gly Met Ala Asn Lys Glu Asn
 115 120 125
 Gly Pro Ala Leu Lys Gln Pro Lys Asp Leu Arg Leu Val Leu Arg Cys
 130 135 140
 Pro Asn Gln Pro Asp Thr Leu Leu Tyr Ser Glu Lys Glu Ala Glu Lys
 145 150 155 160
 Gly Ile Glu Thr Asn Thr Cys Leu Cys Asn Gln Gly Tyr Thr Leu Leu
 165 170 175
 Asp Gly Gln Leu Ile Leu Tyr Gly Asp Ser Ile Glu Lys Phe Leu Lys
 180 185 190
 Glu Thr Lys Arg Lys Asn Asn His Thr Leu Val Asp Leu Cys Asp Ser
 195 200 205
 Gln Val Val Thr Thr Phe Leu Gly Arg Phe Trp Ser Leu Leu Asn Tyr
 210 215 220
 Val Gln Val Leu Phe Leu Ser Glu Asp Ser Ala Lys Xaa Leu Ala Gly
 225 230 235 240
 Ile Pro Asp Leu Ala Gln Xaa Arg Asn Cys Phe Pro Thr Pro Tyr Leu
 245 250 255
 Cys Phe Leu Phe Ile Pro Thr Ile Leu Phe Thr Ser
 260 265
 <210>594
 <211>648
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>594

Met Phe Val Met Lys Lys Leu Val Arg Leu Cys Val Val Leu Leu Ser
 1 5 10 15
 Leu Leu Pro Asn Val Leu Phe Ser Ser Asp Leu Leu Arg Glu Glu Gly
 20 25 30
 Ile Lys Lys Met Met Asp Lys Leu Ile Glu Tyr His Val Asp Ala Gln
 35 40 45
 Glu Val Ser Thr Asp Ile Leu Ser Arg Ser Leu Ser Ser Tyr Ile Gln
 50 55 60
 Ser Phe Asp Pro His Lys Ser Tyr Leu Ser Asn Gln Glu Val Ala Val
 65 70 75 80
 Phe Leu Gln Ser Pro Glu Thr Lys Lys Arg Leu Leu Lys Asn Tyr Lys
 85 90 95
 Ala Gly Asn Phe Ala Ile Tyr Arg Asn Ile Asn Gln Leu Ile His Glu
 100 105 110
 Ser Ile Leu Arg Ala Arg Gln Trp Arg Asn Glu Trp Val Lys Asn Pro
 115 120 125
 Lys Glu Leu Val Leu Glu Ala Ser Ser Tyr Gln Ile Ser Lys Gln Pro
 130 135 140
 Met Gln Trp Ser Lys Ser Leu Asp Glu Val Lys Gln Arg Gln Arg Ala
 145 150 155 160
 Leu Leu Leu Ser Tyr Leu Ser Leu His Leu Ala Gly Ala Ser Ser Ser
 165 170 175
 Arg Tyr Glu Gly Lys Glu Glu Gln Leu Ala Ala Leu Cys Leu Arg Gln
 180 185 190
 Ile Glu Asn His Glu Asn Val Tyr Leu Gly Ile Asn Asp His Gly Val
 195 200 205
 Ala Met Asp Arg Asp Glu Glu Ala Tyr Gln Phe His Ile Arg Val Val
 210 215 220
 Lys Ala Leu Ala His Ser Leu Asp Ala His Thr Ala Tyr Phe Ser Lys
 225 230 235 240
 Asp Glu Ala Leu Ala Met Arg Ile Gln Leu Glu Lys Gly Met Cys Gly
 245 250 255
 Ile Gly Val Val Leu Lys Glu Asp Ile Asp Gly Val Val Val Arg Glu
 260 265 270
 Ile Ile Pro Gly Gly Pro Ala Ala Lys Ser Gly Asp Leu Gln Leu Gly
 275 280 285
 Asp Ile Ile Tyr Arg Val Asp Gly Lys Asp Ile Glu His Leu Ser Phe
 290 295 300
 Arg Gly Val Leu Asp Cys Leu Arg Gly Ser His Gly Ser Thr Val Val
 305 310 315 320
 Leu Asp Ile His Arg Gly Glu Ser Asp His Thr Ile Ala Leu Arg Arg
 325 330 335
 Glu Lys Ile Leu Leu Glu Asp Arg Arg Val Asp Val Ser Tyr Glu Pro
 340 345 350
 Tyr Gly Asp Gly Val Ile Gly Lys Val Thr Leu His Ser Phe Tyr Glu
 355 360 365
 Gly Glu Asn Gln Val Ser Ser Glu Gln Asp Leu Arg Arg Ala Ile Gln
 370 375 380
 Gly Leu Lys Glu Lys Asn Leu Leu Gly Leu Val Leu Asp Ile Arg Glu
 385 390 395 400
 Asn Thr Gly Gly Phe Leu Ser Gln Ala Ile Lys Val Ser Gly Leu Phe
 405 410 415
 Met Thr Asn Gly Val Val Val Val Ser Arg Tyr Ala Asp Gly Thr Met
 420 425 430
 Lys Cys Tyr Arg Thr Val Ser Pro Lys Lys Phe Tyr Asp Gly Pro Leu
 435 440 445
 Ala Ile Leu Val Ser Lys Ser Ser Ala Ser Ala Ala Glu Ile Val Ala
 450 455 460
 Gln Thr Leu Gln Asp Tyr Gly Val Ala Leu Val Val Gly Asp Glu Gln
 465 470 475 480
 Thr Tyr Gly Lys Gly Thr Ile Gln His Gln Thr Ile Thr Gly Asp Ala
 485 490 495
 Ser Gln Asp Asp Cys Phe Lys Val Thr Val Gly Lys Tyr Tyr Ser Pro
 500 505 510

Ser Gly Lys Ser Thr Gln Leu Gln Gly Val Lys Ser Asp Ile Leu Ile
 515 520 525
 Pro Ser Leu Tyr Ala Glu Asp Arg Leu Gly Glu Arg Phe Leu Glu His
 530 535 540
 Pro Leu Pro Ala Asp Cys Asp Asn Val Leu His Asp Pro Leu Thr
 545 550 555 560
 Asp Leu Asp Thr Gln Thr Arg Pro Trp Phe Gln Lys Tyr Tyr Leu Pro
 565 570 575
 Asn Leu Gln Lys Gln Glu Thr Leu Trp Arg Glu Met Leu Pro Gln Leu
 580 585 590
 Thr Lys Asn Ser Glu Gln Arg Leu Ser Glu Asn Ser Asn Phe Gln Ala
 595 600 605
 Phe Leu Ser Gln Ile Lys Ser Ser Glu Lys Thr Asp Leu Ser Tyr Gly
 610 615 620
 Ser Asn Asp Leu Gln Leu Glu Glu Ser Ile Asn Ile Leu Lys Asp Met
 625 630 635 640
 Ile Leu Leu Gln Gln Cys Arg Lys
 645

<210>595

<211>199

<212>PRT

<213>Chlamydia pneumoniae

<400>595

Glu Asn Gly Met Ser Ser Asn Leu His Pro Val Gly Gly Thr Gly Thr
 1 5 10 15
 Gly Ala Ala Ala Pro Glu Ser Val Leu Asn Ile Val Glu Glu Ile Ala
 20 25 30
 Ala Ser Gly Ser Val Thr Ala Gly Leu Gln Ala Ile Thr Ser Ser Pro
 35 40 45
 Gly Met Val Asn Leu Leu Ile Gly Trp Ala Lys Thr Lys Phe Ile Gln
 50 55 60
 Pro Ile Arg Glu Ser Lys Leu Phe Gln Ser Arg Ala Cys Gln Ile Thr
 65 70 75 80
 Leu Leu Val Leu Gly Ile Leu Leu Val Val Ala Gly Leu Ala Cys Met
 85 90 95
 Phe Ile Phe His Ser Gln Leu Gly Ala Asn Ala Phe Trp Leu Ile Ile
 100 105 110
 Pro Ala Ala Ile Gly Leu Ile Lys Leu Leu Val Thr Ser Leu Cys Phe
 115 120 125
 Asp Glu Ala Cys Thr Ser Glu Lys Leu Met Val Phe Gln Lys Trp Ala
 130 135 140
 Gly Val Leu Glu Asp Gln Leu Asp Asp Gly Ile Leu Asn Asn Ser Asn
 145 150 155 160
 Lys Ile Phe Gly His Val Lys Thr Glu Gly Asn Thr Ser Arg Ala Xaa
 165 170 175
 Thr Pro Val Leu Asn Asp Gly Arg Gly Xaa Pro Val Leu Ser Pro Leu
 180 185 190
 Val Ser Lys Ile Ala Arg Val
 195

<210>596

<211>556

<212>PRT

<213>Chlamydia pneumoniae

<400>596

Met Ser Lys Leu Ile Arg Arg Val Val Thr Val Leu Ala Leu Thr Ser
 1 5 10 15
 Met Ala Ser Cys Phe Ala Ser Gly Gly Ile Glu Ala Ala Val Ala Glu
 20 25 30
 Ser Leu Ile Thr Lys Ile Val Ala Ser Ala Glu Thr Lys Pro Ala Pro
 35 40 45
 Val Pro Met Thr Ala Lys Lys Val Arg Leu Val Arg Arg Asn Lys Gln
 50 55 60
 Pro Val Glu Gln Lys Ser Arg Gly Ala Phe Cys Asp Lys Glu Phe Tyr
 65 70 75 80

748

<400>597

Met Lys Lys Ala Val Leu Ile Ala Ala Met Phe Cys Gly Val Val Ser
 1 5 10 15
 Leu Ser Ser Cys Cys Arg Ile Val Asp Cys Cys Phe Glu Asp Pro Cys
 20 25 30
 Ala Pro Ser Ser Cys Asn Pro Cys Glu Val Ile Arg Lys Lys Glu Arg
 35 40 45
 Ser Cys Gly Gly Asn Ala Cys Gly Ser Tyr Val Pro Ser Cys Ser Asn
 50 55 60
 Pro Cys Gly Ser Thr Glu Cys Asn Ser Gln Ser Pro Gln Val Lys Gly
 65 70 75 80
 Cys Thr Ser Pro Asp Gly Arg Cys Lys Gln
 85 90

<210>598

<211>516

<212>PRT

<213>Chlamydia pneumoniae

<400>598

Met Lys Ser Leu Trp Ser Lys Asp Lys Arg Ile Met Asn Trp Glu Asn
 1 5 10 15
 Val Arg Val Arg Val Ala Pro Ser Pro Thr Gly Asp Pro His Val Gly
 20 25 30
 Thr Ala Tyr Met Ala Leu Phe Asn Glu Ile Phe Ala Lys Arg Phe Lys
 35 40 45
 Gly Lys Met Ile Leu Arg Ile Glu Asp Thr Asp Arg Thr Arg Ser Arg
 50 55 60
 Gln Asp Tyr Glu Glu Asn Ile Phe Ser Ala Leu Arg Trp Cys Gly Ile
 65 70 75 80
 Gln Trp Asp Glu Gly Pro Asp Val Gly Gly Pro Tyr Gly Pro Tyr Arg
 85 90 95
 Gln Ser Glu Arg Thr Lys Ile Tyr Gln Gly Tyr Val Glu Thr Leu Leu
 100 105 110
 Lys Thr Asp Cys Ala Tyr Lys Cys Phe Ala Thr Pro Gln Glu Leu Ala
 115 120 125
 Glu Met Arg Ala Val Ala Ser Thr Leu Gly Tyr Arg Gly Gly Tyr Asp
 130 135 140
 Arg Arg Tyr Arg Tyr Leu Ser Pro Glu Glu Val Ala Ser Arg Glu Ala
 145 150 155 160
 Ala Gly Gln Pro Tyr Thr Ile Arg Leu Lys Val Pro Leu Ser Gly Glu
 165 170 175
 Cys Val Phe Glu Asp Tyr Ser Lys Gly Arg Val Val Phe Pro Trp Ala
 180 185 190
 Asp Val Asp Asp Gln Val Leu Val Lys Ser Asp Gly Phe Pro Thr Tyr
 195 200 205
 His Phe Ala Asn Val Ile Asp Asp His Leu Met Gly Ile Thr His Val
 210 215 220
 Leu Arg Gly Glu Glu Trp Leu Ser Ser Thr Pro Lys His Leu Leu Leu
 225 230 235 240
 Tyr Glu Ala Phe Gly Trp Glu Pro Pro Val Phe Leu His Met Pro Leu
 245 250 255
 Leu Leu Asn Pro Asp Gly Thr Lys Leu Ser Lys Arg Lys Asn Pro Thr
 260 265 270
 Ser Ile Phe Tyr Tyr Arg Asp Ser Gly Tyr Val Lys Glu Ala Phe Val
 275 280 285
 Asn Phe Leu Thr Leu Met Gly Tyr Ser Met Glu Gly Asp Glu Glu Val
 290 295 300
 Tyr Ser Leu Glu Arg Ile Ile Glu Thr Phe Asn Pro Arg Arg Ile Gly
 305 310 315 320
 Lys Ser Gly Ala Val Phe Asp Ile Gln Lys Leu Asp Trp Met Asn Lys
 325 330 335
 His Tyr Leu Asn His Glu Gly Ser Pro Glu Cys Leu Leu Lys Glu Leu
 340 345 350
 Gln Gly Trp Leu Leu Asn Asp Glu Phe Phe Leu Lys Ile Leu Pro Leu
 355 360 365

Cys Gln Ser Arg Ile Thr Thr Leu Ala Glu Phe Ile Asn Leu Thr Ser
 370 375 380
 Phe Phe Phe Ser Gly Leu Leu Glu Tyr Arg Val Glu Glu Leu Leu Pro
 385 390 395 400
 Gln Ala Leu Ser Pro Glu Lys Ala Ala Ile Leu Leu Tyr Ser Tyr Val
 405 410 415
 Lys Tyr Leu Glu Lys Thr Asp Gln Trp Thr Lys Glu Thr Cys Tyr Leu
 420 425 430
 Gly Ser Lys Trp Leu Ala Gln Ala Phe Asn Val His His Lys Dys Ala
 435 440 445
 Ile Ile Pro Leu Leu Tyr Val Ala Ile Thr Gly Lys Lys Gln Gly Leu
 450 455 460
 Pro Leu Phe Asp Ser Ile Glu Ile Leu Gly Lys Pro Arg Ala Arg Ala
 465 470 475 480
 Arg Leu Val Tyr Ala Glu Lys Leu Leu Gly Gly Val Pro Lys Lys Leu
 485 490 495
 Ala Ala Thr Val Asp Lys Phe Met Gln Arg Glu Asp Phe Glu Glu Ala
 500 505 510
 Thr Phe Asp Leu
 515

<210>599

<211>181

<212>PRT

<213>Chlamydia pneumoniae

<400>599

Met Ala Cys Glu Gln His Glu Gly Cys Tyr Glu Leu Glu Glu Arg Glu
 1 5 10 15
 Glu Arg Glu Glu Ile Glu Asp Ile Lys Asp Ser Asp Thr Lys Trp Val
 20 25 30
 Ser Ile Thr Gln Ala Ala Lys Leu His Asn Val Thr Arg Gln Ala Ile
 35 40 45
 Tyr Val Ala Ile Lys Gln Lys Lys Leu Lys Ala Ser Lys Glu Thr Arg
 50 55 60
 Trp Glu Ile Asp Ile Lys Asp Leu Glu Glu Tyr Lys Arg Asn Arg Tyr
 65 70 75 80
 Ser Arg Lys Lys Ser Leu Tyr Gln Gly Glu Leu Val Phe Asp Asn Gly
 85 90 95
 Lys Gly Cys Tyr Ser Ile Asn Gln Val Ala Gln Ile Leu Gly Ile Pro
 100 105 110
 Val Gln Lys Val Tyr Tyr Ala Thr Arg Thr Gly Thr Ile Arg Gly Glu
 115 120 125
 Arg Lys Gly Ala Ala Trp Val Ile His Val Ser Glu Ile Glu Arg Tyr
 130 135 140
 Lys Asn Glu Tyr Leu Ser Lys Gln Ala Ala Lys Lys Leu Lys Gly Ala
 145 150 155 160
 Glu Pro Lys Glu His Gln Ala Pro Asn Phe Glu Pro Pro Thr Glu Ile
 165 170 175
 Phe Pro Glu Ser Asn
 180

<210>600

<211>373

<212>PRT

<213>Chlamydia pneumoniae

<400>600

Met Ser Ile Ala Ile Ala Arg Glu Gln His Ala Ala Ile Leu Asp Met
 1 5 10 15
 His Pro Lys Pro Ser Ile Ala Met Phe Ser Ser Glu Gln Ala Arg Thr
 20 25 30
 Ser Trp Glu Lys Arg Gln Ala His Pro Tyr Leu Tyr Arg Leu Leu Glu
 35 40 45
 Ile Ile Trp Gly Val Val Lys Phe Leu Leu Gly Leu Ile Phe Phe Ile
 50 55 60
 Pro Leu Gly Leu Phe Trp Val Leu Gln Lys Ile Cys Gln Asn Phe Ile
 65 70 75 80

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<210>601
<211>564
<212>PRT
<213>Chlamydia pneumoniae
<400>601
Gln Tyr Lys Asn Leu Leu Trp Asp Phe Ser Pro Lys Gly Pro Cys Gly
 1          5          10          15
Ile Lys Phe Met Thr Asn Ser Asp Asn Ala Ser Ala Ala Gly Leu Leu
          20          25          30
Trp Ala His Pro Lys Glu Asp Pro Ala Phe Leu Gly Met Ile Ile Lys
          35          40          45
Glu Phe His Leu Pro Pro Thr Val Ala Gln Ile Phe Ile Ser Arg Gly
          50          55          60
Phe Gln Thr Ile Gln Glu Ile His Lys Phe Leu Tyr Ser His Leu Ser
          65          70          75          80
Ser Leu Tyr Asp Pro Gly Leu Phe Leu Asp Met Ser Lys Ala Val Glu
          85          90          95
Arg Leu Leu Leu Ala Arg Asp Arg Lys Glu His Val Met Ile Tyr Gly
          100          105          110
Asp Ser Asp Val Asp Gly Met Thr Gly Val Ala Leu Leu Val Glu Phe
          115          120          125
Leu Arg Asp Ile Asp Val His Val Ser Tyr Phe Phe Leu Gly Ala Ile
          130          135          140
Leu Lys Gln His Gly Glu Thr Ser Thr Leu Ile Ala Lys Leu Lys Glu
          145          150          155          160
Glu Gly Ile Thr Leu Leu Ile Thr Val Asp Cys Gly Ile Thr Ala Gly

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165 170 175
 Lys Glu Val Ser Asp Ile Thr Arg Gln Gly Ile Asp Val Ile Ile Thr
 180 185 190
 Asp His His Met Pro Thr Gly Lys Ile Pro His Cys Val Val Thr Leu
 195 200 205
 Asn Pro Lys Leu Arg Asp His Thr Tyr Pro Asn Arg Glu Leu Thr Gly
 210 215 220
 Val Gly Val Ala Phe Lys Leu Ala Arg Gly Val Leu Asn Ala Leu Ile
 225 230 235 240
 Ser Arg Asn Leu Val Pro Lys Ser Gln Gly Ser Leu Lys Lys Leu Leu
 245 250 255
 Asp Leu Val Thr Leu Gly Thr Ile Thr Asp Val Gly Val Leu Leu Gly
 260 265 270
 Glu Asn Arg Val Met Val Arg Tyr Gly Ile Lys Glu Ile Ala Arg Gly
 275 280 285
 Ala Arg Pro Gly Leu Asn Lys Leu Cys Ala Leu Cys Gly Val Glu Lys
 290 295 300
 Ser Glu Val Thr Ser Thr Asp Ile Val Leu Lys Ile Ala Pro Lys Leu
 305 310 315 320
 Asn Ser Leu Gly Arg Leu Asp Asp Pro Ala Lys Gly Val Glu Leu Leu
 325 330 335
 Leu Thr Gln Asp Asp Glu Arg Val Asp Ala Leu Ile Met Glu Leu Asp
 340 345 350
 Asn Ile Asn Arg Glu Arg Gln Arg Ile Glu Ala Glu Val Phe Gln Asp
 355 360 365
 Val Gln Glu Ile Leu Asn Ser Asn Pro Glu Ile Leu Lys Gln Ala Ala
 370 375 380
 Ile Val Leu Ser Ser Thr Ala Trp His Ala Arg Val Ile Pro Ile Ile
 385 390 395 400
 Ser Ala Arg Leu Ala Lys Thr Tyr Asn Lys Pro Val Val Ile Ile Ala
 405 410 415
 Ile Gln Arg Gly Ile Gly Lys Gly Ser Ala Arg Thr Ile Gly Ser Phe
 420 425 430
 Pro Leu Leu Gly Val Leu Lys Lys Cys Ser Ser Leu Leu Leu Ser Tyr
 435 440 445
 Gly Gly His Asp Phe Ala Ala Gly Val Ile Met Lys Glu Asp Lys Val
 450 455 460
 Glu Asp Phe Lys Lys Lys Phe Val His Leu Val Asn Ser Ser Leu Lys
 465 470 475 480
 Lys Gly Asp Thr Leu Pro His Leu Glu Ile Asp Ala Tyr Ala Asp Phe
 485 490 495
 Asp Ala Ile Asp Tyr Asp Leu Leu Ala Ser Met Glu Leu Phe Glu Pro
 500 505 510
 Phe Gly Lys Gly Asn Leu Met Pro Ile Phe Tyr Ser Lys Val Arg Gln
 515 520 525
 Val Arg Tyr Pro Lys Val Leu Pro Gly Asn His Leu Lys Leu Tyr Leu
 530 535 540
 Ser Gln Lys Glu Arg Asn Leu Glu Gly Val Ala Ser Val Trp Glu Asp
 545 550 555 560
 Thr Leu Met His

<210>602

<211>997

<212>PRT

<213>Chlamydia pneumoniae

<400>602

Arg Lys Arg Ser Phe Gly Cys Tyr Ile Phe Ser Pro Asn Thr Asp Cys
 1 5 10 15
 Lys His Phe Ser Lys Gly Ser Val Tyr Ile Leu Leu Lys Gly Leu Arg
 20 25 30
 Ser Ile Val Ala Lys Tyr Gln Gln Gly Gly Lys Glu Leu Gln Ser
 35 40 45
 Phe Glu Lys Asp Leu Gln Asn Leu Tyr Asn Cys Phe Ser His Thr Glu
 50 55 60

Ala	Ile	Ser	Trp	Thr	Leu	Gly	Glu	Asp	Gln	Val	Leu	Glu	Ile	Arg	His
65					70					75					80
Pro	Leu	Gln	Gln	Phe	Leu	Asp	Val	Trp	Gly	Glu	Gly	Phe	Val	Ile	Gly
				85					90					95	
Lys	Glu	Gly	Cys	Ala	Phe	Leu	Glu	Val	Lys	Asp	Ile	Gln	Asp	Arg	Leu
			100					105					110		
Ala	Thr	Val	Asn	Gln	Ile	Glu	Lys	Asn	Arg	Gln	Ser	Asp	Leu	Val	Arg
		115					120					125			
Trp	His	Glu	Gln	Tyr	Arg	His	Ala	Lys	Cys	Ser	Met	Asp	Leu	Gln	Glu
	130					135					140				
Arg	Leu	Ser	Ala	Pro	Ile	Pro	Tyr	Gln	Asn	Leu	Phe	Leu	Glu	Asn	Met
145					150					155					160
Lys	Leu	Asn	Met	Arg	Lys	Phe	Ser	Arg	Gly	Glu	Asn	Ile	Leu	Arg	Leu
				165					170					175	
Gly	Ile	Asp	Phe	Val	Gly	Gly	Arg	Gln	Leu	Leu	Leu	Ser	Phe	Lys	Asp
			180					185						190	
His	Gln	Gly	Lys	Gln	Leu	Thr	Asp	Lys	Glu	Asp	Ile	Leu	Lys	Val	Ser
		195					200					205			
Asp	Glu	Leu	Cys	Ala	Arg	Leu	Asn	Lys	Leu	Gly	Val	Ser	Glu	Ile	Glu
	210					215					220				
Leu	Arg	Arg	Glu	Gly	Asp	Tyr	Ile	His	Leu	Ser	Val	Pro	Gly	Ser	Ser
225					230						235				240
Thr	Ile	Ser	Ser	Ser	Glu	Ile	Leu	Gly	Thr	Ser	Lys	Met	Ser	Phe	His
				245					250						255
Val	Val	Asn	Glu	Arg	Phe	Ser	Ser	Tyr	Ser	Ala	Ser	Arg	Tyr	Glu	Val
		260						265						270	
Gln	Arg	Phe	Leu	Asp	Tyr	Leu	Trp	Phe	Thr	Ser	Gln	Ala	Gln	Gly	Lys
		275					280					285			
Thr	Ser	Pro	Glu	Glu	Ile	Asn	Thr	Phe	Ala	Ser	Ala	Leu	Phe	Asn	Glu
	290					295					300				
Glu	Val	Asp	Val	Pro	Pro	Ser	Val	His	Glu	Ala	Ile	Thr	Lys	Leu	Lys
305					310					315					320
Ser	Glu	Gly	Leu	Ala	Phe	Ser	Pro	Ser	Gly	Cys	Glu	Thr	Pro	Ser	Thr
				325					330					335	
Asp	Leu	Asp	Thr	Thr	Phe	Ser	Met	Ile	Ala	Ile	Gly	Lys	Asp	Ala	Glu
			340				345						350		
Gln	Lys	Ala	Asn	Pro	Leu	Val	Ile	Val	Phe	Arg	Asn	Tyr	Ala	Leu	Asp
		355					360					365			
Gly	Ala	Ser	Leu	Lys	Asp	Ile	Arg	Pro	Glu	Phe	Ala	Ala	Gly	Glu	Gly
	370					375					380				
Tyr	Val	Leu	Asn	Phe	Ser	Val	Lys	Asp	Thr	Ser	Pro	Lys	Lys	Met	Ala
385					390					395					400
Glu	Lys	Leu	Ser	Pro	Thr	Glu	Ser	Phe	His	Thr	Trp	Thr	Ser	Ala	Tyr
				405						410					415
Cys	Gln	Glu	Gly	Ile	Ser	Gly	Thr	Ala	Asn	Gly	Gln	Tyr	Ser	Ala	Asn
			420				425						430		
Arg	Gly	Trp	Arg	Met	Ala	Val	Val	Ile	Asp	Gly	Tyr	Met	Val	Ser	Ser
	435						440					445			
Pro	Ile	Leu	Asn	Val	Pro	Leu	Lys	Asn	His	Ala	Ser	Val	Ser	Gly	Lys
	450					455					460				
Phe	Thr	His	Arg	Glu	Val	Ser	Lys	Leu	Ala	Ser	Asp	Leu	Lys	Ser	Gly
465					470					475					480
Ala	Met	Ser	Phe	Val	Pro	Glu	Val	Leu	Ser	Glu	Glu	Thr	Ile	Ser	Ser
				485						490				495	
Asp	Leu	Gly	Lys	Lys	Gln	Cys	Thr	Gln	Gly	Ile	Ile	Ser	Ala	Cys	Cys
			500					505					510		
Gly	Leu	Ala	Met	Leu	Ile	Val	Leu	Met	Ser	Val	Tyr	Tyr	Arg	Phe	Gly
	515						520						525		
Gly	Val	Ile	Ala	Ser	Gly	Ala	Val	Leu	Leu	Asn	Leu	Leu	Leu	Ile	Trp
	530					535					540				
Ala	Ala	Leu	Gln	Tyr	Leu	Asp	Ala	Pro	Leu	Thr	Leu	Ser	Gly	Leu	Ala
545					550					555					560
Gly	Ile	Val	Leu	Ala	Met	Gly	Met	Ala	Val	Asp	Ala	Asn	Val	Leu	Val
				565					570						575

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<210>603
<211>435
<212>PRT
<213>Chlamydia pneumoniae
<400>603
Ser Gly Ala Met Lys Gln Lys Val Lys Arg Asn Phe Ala Ile Ile Ile
  1           5           10           15
Cys Val Phe Ala Leu Ala Leu Tyr Tyr Val Leu Pro Thr Cys Leu Tyr
          20           25           30
Tyr Ala Lys Pro Leu Asp Lys Lys Ile Asp Gly Asn Glu Ala Glu His

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35 40 45
 Ile Ile Lys Ser Phe Thr Lys Gln Ala Gln Gln Val Arg Lys Asp Val
 50 55 60
 Ile Pro Arg Val Ser Ala Ile Leu Ser Ser Leu His Leu Arg Gly His
 65 70 75 80
 Ile Gln Gln His Pro Ala Ile Pro Asp Ile Val Ser Val Arg Phe Lys
 85 90 95
 Arg Gly Glu Asp Ala Glu Asp Phe Ile Gly Asn Leu Val His Gly Glu
 100 105 110
 Pro Asn Val Pro Ile Lys Ser Ala Arg Leu His Val Val Gly Tyr Ser
 115 120 125
 Arg Glu His Asp Asp His Val Ile Gln Val Ala Ser Ser Ile Asn Thr
 130 135 140
 Ser Leu Val Glu Ser Asp Phe Ser Phe Val Ser Tyr Ser Ser Glu Asn
 145 150 155 160
 Glu Gln Glu Met Ala Ser Ser Ile Leu Gln Arg Val Tyr Ser Ala Cys
 165 170 175
 Thr Cys Pro Lys Gln Lys Asp Cys Ser Cys Ser Tyr Pro Ser Ile Trp
 180 185 190
 Glu Thr Ala Pro Lys Glu Gln Leu Leu Gln Tyr Ala Lys Asn Leu Ser
 195 200 205
 Ser Gly Phe Glu Val Phe Ser Ser Arg Leu Ser Ala Phe Cys Gln Gln
 210 215 220
 Ser Phe Ser Ser Asn Gln Asp Arg Leu Ala Phe Leu Ser Arg Leu Ser
 225 230 235 240
 Ser Leu Ser Asn Asp Ala Ala Ile Asp Val Glu Asp Gln Lys Leu Leu
 245 250 255
 Lys Ser Val Tyr Glu Thr Leu Ser Gln Thr Ala Cys Ile Arg Ser Leu
 260 265 270
 Asp Cys Pro Tyr Ile Glu Gly Leu Arg Leu Asp Cys Ser Glu Ser Ser
 275 280 285
 Leu Phe Phe Ser Ser Ile Glu Tyr Cys Pro Lys Glu Arg Lys Ile Phe
 290 295 300
 Leu Thr Leu His Ser Asp Leu Leu Ala Gln Arg Thr Ser Leu Ser Lys
 305 310 315 320
 Glu Gln Arg Leu Asp Phe Asp Ser Arg Leu Ala Val Glu Lys Gln Lys
 325 330 335
 Leu Ser Lys Asn Leu Thr Val Gln Val Glu Asp Tyr Asn Asn Gly Phe
 340 345 350
 Ser Phe Gln Trp Met Asp Lys Asp Thr Gln Gly Lys Ile Ile Leu Gln
 355 360 365
 Gly Glu Arg Leu Leu Gln Gly Ile Ala Glu His Leu Thr Ala Leu Thr
 370 375 380
 Leu His Arg Pro Ala Ala Glu Ser Cys Asp Leu Ile Pro Glu Asn Phe
 385 390 395 400
 Pro Val Phe Cys Arg Gln Pro Arg Glu Ser Glu Val Leu Ala Val Thr
 405 410 415
 Ser Phe Leu Pro Ile Gln Ile Ala Asn Thr Phe Leu Lys Ala Pro Phe
 420 425 430
 Thr Ser Tyr
 435

<210>604

<211>367

<212>PRT

<213>Chlamydia pneumoniae

<400>604

Tyr Glu Ile Ser Ser His Ile His Phe Arg Phe Asp Ser His Ser Asn
 1 5 10 15
 Gly His Leu Val Ala Ala Glu Xaa Gly Asn Val His Tyr Val Pro Asn
 20 25 30
 Ala Gln Asn Leu Pro Lys Lys Ile Leu Gly Gly Val Leu Ala Cys Phe
 35 40 45
 Gly Leu Ala Leu Leu Gly Cys Ala Ala Phe Ala Ala Gly Val Cys Gln
 50 55 60

Thr Ile Phe Pro Cys Ile Gly Leu Met Ile Leu Gly Leu Val Leu Leu
 65 70 75 80
 Gly Phe Ala Tyr Leu Gln Tyr Ser Lys Gly Trp Ser Arg Phe Glu Arg
 85 90 95
 Pro Leu Phe Arg Glu Thr Lys Val Phe Glu Lys Pro Ile Asn Trp Leu
 100 105 110
 Gly Cys Leu Ser Leu Leu Gln Ser Trp Lys Lys Ile Arg Pro Gly Cys
 115 120 125
 Tyr Tyr His Pro Gly Cys Pro Gln Val Glu Ile Cys Glu Gly Ser Gln
 130 135 140
 Glu Ile Val Thr Lys Ile Phe Gln Lys Lys Ser Asp Arg Asn Thr Ser
 145 150 155 160
 Ile Phe Leu Ile Gln Glu Met Asp Gln Ile Ala Leu Arg Gln Gly Ile
 165 170 175
 Glu Lys Ser Ser Leu Ser Arg Lys Thr Phe Ala Ile Asp Pro Ser Val
 180 185 190
 Val Ser Ser Leu Leu Ser Glu Ile Gln Arg Glu Glu Gln Gln Tyr Leu
 195 200 205
 Asp Pro Lys Val Ile Ser Trp Ser Ser Glu Asp Gln Ala Ser Asp Arg
 210 215 220
 Thr His Pro Lys Ser Ala Ile Tyr Val Asn Ile Ser Asp Ala Ala Gln
 225 230 235 240
 Glu Pro Gln Gly Arg Cys Tyr Ile Asp Ala Tyr Thr Lys Ala Phe Phe
 245 250 255
 Thr Val Leu Asp Gln Ile Gly Asp Pro Asn Ile Val Lys Lys His Thr
 260 265 270
 Ile Tyr Val Leu Thr Pro Ile Leu Gly Val Pro Asp Ala Leu Pro Lys
 275 280 285
 Glu Glu Gln Glu Asn Leu Lys Leu Leu Ser Gln Ala Ala Phe Leu Tyr
 290 295 300
 Ser Ala Glu Gln Val Ala Lys Arg Met Arg Glu Glu Lys Gln Asp Ser
 305 310 315 320
 Ile Arg Ile Lys Phe Ile Phe Thr Asp Pro Thr Ser Pro Thr Ser Leu
 325 330 335
 Tyr Phe Ser Pro His His Ser Ser Thr Pro His Ser Val Thr Pro Ile
 340 345 350
 Ser Leu Ser Gly Phe Val Gly Glu Gln Glu Ser Tyr Thr Phe Ala
 355 360 365

<210>605

<211>261

<212>PRT

<213>Chlamydia pneumoniae

<400>605

Val Thr Tyr Ala Leu Ile Asn Asp Pro Val Asp Leu Ser Leu Ala Thr
 1 5 10 15
 Asn Asn Ala Glu Ser Lys Phe Pro Ser Leu Gln Arg Leu Pro Asn His
 20 25 30
 Val Ala Ile Ile Met Asp Gly Asn Arg Arg Trp Tyr Lys Lys His Arg
 35 40 45
 Glu Glu Cys Gly His Thr His Thr Ser Gly His Tyr Tyr Gly Ala Lys
 50 55 60
 Val Leu Pro Asn Ile Leu Asn Ala Val Leu Asp Leu Gly Ile Lys Val
 65 70 75 80
 Leu Thr Leu Tyr Thr Phe Ser Thr Glu Asn Phe Gly Arg Pro Lys Glu
 85 90 95
 Glu Ile Gln Glu Ile Phe Asn Ile Phe Tyr Thr Gln Leu Asp Lys Gln
 100 105 110
 Leu Pro Tyr Leu Met Glu Asn Glu Ile Cys Leu Arg Cys Ile Gly Asp
 115 120 125
 Leu Ser Lys Leu Pro Lys Gly Ile Gln Thr Lys Ile Asn His Val Ser
 130 135 140
 Arg Met Thr Ala Ser Phe Ser Arg Leu Glu Leu Val Leu Ala Val Asn
 145 150 155 160
 Tyr Gly Gly Lys Asp Glu Leu Val Arg Ala Phe Lys Lys Leu His Val

165 170 175
 Asp Ile Leu Asn Lys Lys Ile Ser Ser Asp Asp Leu Ser Glu Ser Leu
 180 185 190
 Ile Ser Ser Tyr Leu Asp Thr Ser Gly Leu Thr Asp Pro Asp Leu Leu
 195 200 205
 Ile Arg Thr Gly Gly Glu Met Arg Val Ser Asn Phe Leu Leu Trp Gln
 210 215 220
 Ile Ala Tyr Thr Glu Leu Tyr Ile Thr Asp Thr Leu Trp Pro Asp Phe
 225 230 235 240
 Thr Pro Gln Asp Leu Phe Glu Ala Ile Asn Val Tyr Gln Gln Arg Ser
 245 250 255
 Arg Arg Gly Gly Lys
 260

<210>606

<211>308

<212>PRT

<213>Chlamydia pneumoniae

<400>606

Val Leu Asn Ser Asn Lys Phe Lys Ser Lys Thr Gly Ala Tyr Gly Asp
 1 5 10 15
 Leu Phe Gln Arg Val Val Val His Ser Leu Val Leu Thr Phe Leu Val
 20 25 30
 Leu Leu Leu Tyr Ser Ser Leu Phe Pro Leu Thr Ser Phe Ala Leu Gly
 35 40 45
 Phe Ile Thr Ala Thr Cys Gly Ala Val Gly Thr Tyr Glu Tyr Ser Ser
 50 55 60
 Met Ala Lys Ala Lys Met His Tyr Pro Leu Ser Thr Phe Ser Ala Ile
 65 70 75 80
 Gly Ser Phe Leu Phe Leu Ala Leu Ser Phe Leu Ser Ile Arg Trp Gly
 85 90 95
 His Ser Leu Pro Gly Phe Phe Asp Ala Leu Pro Trp Thr Leu Leu Ile
 100 105 110
 Val Trp Val Val Trp Ser Ile Phe Arg Val Arg Lys Ser Thr Ile Gly
 115 120 125
 Ala Leu Gln Leu Ser Gly Val Thr Leu Phe Ser Ile Leu Tyr Val Gly
 130 135 140
 Ile Pro Ile Arg Leu Phe Leu His Val Leu Tyr Ser Phe Ile His Thr
 145 150 155 160
 Gln Glu Pro Tyr Leu Gly Ile Trp Trp Ala Ser Phe Leu Ile Ala Thr
 165 170 175
 Thr Lys Gly Ala Asp Ile Phe Gly Tyr Phe Phe Gly Lys Ala Phe Gly
 180 185 190
 Asn Lys Lys Ile Ala Pro Gln Ile Ser Pro Asn Lys Thr Val Val Gly
 195 200 205
 Phe Val Ala Gly Cys Leu Gly Ala Thr Leu Ile Ser Phe Ile Phe Phe
 210 215 220
 Leu Gln Ile Pro Thr Arg Phe Ala Ser Tyr Phe Pro Met Pro Ala Ile
 225 230 235 240
 Leu Ile Pro Leu Gly Leu Ala Leu Gly Ile Thr Gly Phe Phe Gly Asp
 245 250 255
 Ile Ile Glu Ser Ile Phe Lys Arg Asp Ala His Leu Lys Asn Ser Asn
 260 265 270
 Lys Leu Lys Ala Val Gly Gly Met Leu Asp Thr Leu Asp Ser Leu Leu
 275 280 285
 Leu Ser Thr Pro Ile Ala Tyr Leu Phe Leu Leu Ile Thr Gln Ser Lys
 290 295 300
 Glu Phe Ile Gly
 305

<210>607

<211>220

<212>PRT

<213>Chlamydia pneumoniae

<400>607

Arg Val Tyr Trp Met Ile Ile Thr Ile Asp Gly Pro Ser Gly Thr Gly

1 5 10 15
 Lys Ser Thr Thr Ala Lys Ala Leu Ala Asp His Leu His Phe Asn Tyr
 20 25 30
 Cys Asn Thr Gly Lys Met Tyr Arg Thr Leu Ala Tyr Ala Arg Leu Gln
 35 40 45
 Ser Pro Trp Ala Thr Leu Pro Leu Thr Lys Phe Leu Glu Glu Pro Pro
 50 55 60
 Phe Ser Phe Thr Phe Ala Thr Gly Gln Pro Leu Glu Ser Phe Phe Asn
 65 70 75 80
 Gly His Leu Leu Thr Ser Glu Leu Thr Thr Gln Glu Val Ala Asn Ala
 85 90 95
 Ala Ser Glu Leu Ser Gln Leu Pro Glu Val Arg Ala Phe Met Gln Asp
 100 105 110
 Leu Gln Arg Arg Tyr Ala Gln Leu Gly Asn Cys Val Phe Glu Gly Arg
 115 120 125
 Asp Met Gly Ser Lys Val Phe Pro Asn Ala Asp Leu Lys Ile Phe Leu
 130 135 140
 Thr Ser Ser Pro Glu Val Arg Ala Gln Arg Arg Leu Lys Asp Leu Pro
 145 150 155 160
 Glu Gly Thr Leu Ser Pro Glu Gln Leu Gln Ala Glu Leu Val Lys Arg
 165 170 175
 Asp Ala Ala Asp Ala Gln Arg Ala His Asp Pro Leu Val Ile Pro Glu
 180 185 190
 Asn Gly Ile Val Ile Asp Ser Ser Asp Leu Thr Ile Arg Gln Val Leu
 195 200 205
 Glu Lys Ile Leu Ala Leu Leu Phe Arg Asn Glu Leu
 210 215 220

<210>608

<211>234

<212>PRT

<213>Chlamydia pneumoniae

<400>608

Leu Phe Gly Phe Asp Asn Lys Thr Ser Ser Gly Glu Asn Phe Ser Phe
 1 5 10 15
 Thr Ile Ser Lys Arg Ala Met Ile Phe Arg Ile Cys Lys Phe Phe Thr
 20 25 30
 Trp Val Ala Phe Ser Leu Phe Tyr Lys Leu Lys Val Tyr Gly Val Lys
 35 40 45
 Lys Asn Phe Ile Lys Gly Pro Ala Ile Ile Ala Val Asn His Asn Ser
 50 55 60
 Phe Leu Asp Pro Ile Ala Leu His Met Cys Val His Glu Cys Ile Tyr
 65 70 75 80
 His Leu Ala Arg Ala Ser Leu Phe Asn Ile Pro Trp Leu Trp Lys Gln
 85 90 95
 Trp Gly Cys Phe Pro Val Arg Gln Asp Glu Gly Asn Ser Ala Ala Phe
 100 105 110
 Lys Ile Ala Ser Arg Leu Phe Asn Lys Arg Lys Lys Leu Val Ile Tyr
 115 120 125
 Pro Glu Gly Ala Arg Ser Pro Asp Gly Gln Leu Gln Pro Gly Lys Val
 130 135 140
 Gly Ile Gly Met Met Ala Ala Lys Ser Arg Val Pro Ile Ile Pro Val
 145 150 155 160
 Tyr Ile Arg Gly Thr Phe Glu Ala Phe Asn Arg His Gln Lys Ile Pro
 165 170 175
 His Val Trp Lys Thr Ile Thr Cys Val Phe Gly Thr Pro Met Tyr Phe
 180 185 190
 Asp Asp Ile Ile Gln Asn Pro Glu Ile Lys Asn Lys Glu Thr Tyr Gln
 195 200 205
 Ile Ile Thr Asn Gln Thr Met Asn Lys Ile Ala Glu Leu Lys Ala Trp
 210 215 220
 Tyr Glu Ser Gly Cys Lys Gly Asp Val Pro
 225 230

<210>609

<211>580

<212>PRT

<213>Chlamydia pneumoniae

<400>609

Leu Pro Ser Ser Lys His Gly Met Asn Arg Gly Ala Lys Glu Thr Ser
 1 5 10 15
 Pro Lys Leu Met Ser Thr Leu Leu Ser Ile Leu Ser Val Ile Cys Ser
 20 25 30
 Gln Ala Ile Ala Lys Ala Phe Pro Asn Leu Glu Asp Trp Ala Pro Glu
 35 40 45
 Ile Thr Pro Ser Thr Lys Glu His Phe Gly His Tyr Gln Cys Asn Asp
 50 55 60
 Ala Met Lys Leu Ala Arg Val Leu Lys Lys Ala Pro Arg Ala Ile Ala
 65 70 75 80
 Glu Ala Ile Val Ala Glu Leu Pro Gln Glu Pro Phe Ser Leu Ile Glu
 85 90 95
 Ile Ala Gly Ala Gly Phe Ile Asn Phe Thr Phe Ser Pro Val Phe Leu
 100 105 110
 Asn Gln Gln Leu Glu His Phe Lys Asp Ala Leu Lys Leu Gly Phe Gln
 115 120 125
 Val Ser Gln Pro Lys Xaa Ile Ile Ile Asp Phe Ser Ser Pro Asn Ile
 130 135 140
 Ala Lys Asp Met His Val Gly His Leu Arg Ser Thr Ile Ile Gly Asp
 145 150 155 160
 Ser Leu Ala Arg Ile Phe Ser Tyr Val Gly His Asp Val Leu Arg Leu
 165 170 175
 Asn His Ile Gly Asp Trp Gly Thr Ala Phe Gly Met Leu Ile Thr Tyr
 180 185 190
 Leu Gln Glu Asn Pro Cys Asp Tyr Ser Asp Leu Glu Asp Leu Thr Ser
 195 200 205
 Leu Tyr Lys Lys Ala Tyr Val Cys Phe Thr Asn Asp Glu Glu Phe Lys
 210 215 220
 Lys Arg Ser Gln Gln Asn Val Val Ala Leu Gln Ala Lys Asp Pro Gln
 225 230 235 240
 Ala Ile Ala Ile Trp Glu Lys Ile Cys Glu Thr Ser Glu Lys Ala Phe
 245 250 255
 Gln Lys Ile Tyr Asp Ile Leu Asp Ile Val Val Glu Lys Arg Gly Glu
 260 265 270
 Ser Phe Tyr Asn Pro Phe Leu Pro Glu Ile Ile Glu Asp Leu Glu Lys
 275 280 285
 Lys Gly Leu Leu Thr Val Ser Asn Asp Ala Lys Cys Val Phe His Glu
 290 295 300
 Ala Phe Ser Ile Pro Phe Met Val Gln Lys Ser Asp Gly Gly Tyr Asn
 305 310 315 320
 Tyr Ala Thr Thr Asp Leu Ala Ala Met Arg Tyr Arg Ile Glu Glu Asp
 325 330 335
 His Ala Asp Lys Ile Ile Ile Val Thr Asp Leu Gly Gln Ser Leu His
 340 345 350
 Phe Gln Leu Leu Glu Ala Thr Ala Ile Ala Ala Gly Tyr Leu Gln Pro
 355 360 365
 Gly Ile Phe Ser His Val Gly Phe Gly Leu Val Leu Asp Pro Gln Gly
 370 375 380
 Lys Lys Leu Lys Thr Arg Ser Gly Glu Asn Val Lys Leu Arg Glu Leu
 385 390 395 400
 Leu Asp Thr Ala Ile Glu Lys Ala Glu Glu Ala Leu Arg Glu His Arg
 405 410 415
 Pro Glu Leu Thr Asp Glu Ala Ile Gln Glu Arg Ala Pro Val Ile Gly
 420 425 430
 Ile Asn Ala Ile Lys Tyr Ser Asp Leu Ser Ser His Arg Thr Ser Asp
 435 440 445
 Tyr Val Phe Ser Phe Glu Lys Met Leu Arg Phe Glu Gly Asn Thr Ala
 450 455 460
 Met Phe Leu Leu Tyr Ala Tyr Val Arg Ile Gln Gly Ile Lys Arg Arg
 465 470 475 480
 Leu Gly Ile Ser Gln Leu Ser Leu Glu Gly Pro Pro Glu Ile Gln Glu

485 490 495
 Pro Ala Glu Glu Leu Leu Ala Leu Thr Leu Leu Arg Phe Pro Glu Ala
 500 505 510
 Leu Glu Ser Thr Ile Lys Glu Leu Cys Pro His Phe Leu Thr Asp Tyr
 515 520 525
 Leu Tyr Asn Leu Thr His Lys Phe Asn Gly Phe Phe Arg Asp Ser His
 530 535 540
 Ile Gln Asp Ser Pro Tyr Ala Lys Ser Arg Leu Phe Leu Cys Ala Leu
 545 550 555 560
 Ala Glu Gln Val Leu Ala Thr Gly Met His Leu Leu Gly Leu Lys Thr
 565 570 575
 Leu Glu Arg Leu
 580
 <210>610
 <211>458
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>610
 Met Gln Ile Ala Gln Val Phe Gly Cys Gly Arg Leu Asn Gly Glu Val
 1 5 10 15
 Lys Val Ser Gly Ala Lys Asn Ala Ala Thr Lys Leu Leu Val Ala Ser
 20 25 30
 Leu Leu Ser Asp Gln Lys Cys Thr Leu Arg Asn Val Pro Asp Ile Gly
 35 40 45
 Asp Val Ser Leu Thr Val Glu Leu Cys Lys Ser Leu Gly Ala His Val
 50 55 60
 Ser Trp Asp Lys Glu Thr Glu Val Leu Glu Ile Tyr Thr Pro Glu Ile
 65 70 75 80
 Gln Cys Thr Arg Val Pro Pro Thr Phe Ser Asn Val Asn Arg Ile Pro
 85 90 95
 Ile Leu Leu Leu Gly Ala Leu Leu Gly Arg Cys Pro Glu Gly Val Tyr
 100 105 110
 Val Pro Thr Val Gly Gly Asp Ala Ile Gly Glu Arg Thr Leu Asn Phe
 115 120 125
 His Phe Glu Gly Leu Lys Gln Leu Gly Val Gln Ile Ser Ser Asp Ser
 130 135 140
 Ser Gly Tyr Tyr Ala Lys Ala Pro Arg Gly Leu Lys Gly Asn Tyr Ile
 145 150 155 160
 His Leu Pro Tyr Pro Ser Val Gly Ala Thr Glu Asn Leu Ile Leu Ala
 165 170 175
 Ala Ile His Ala Lys Gly Arg Thr Val Ile Lys Asn Val Ala Leu Glu
 180 185 190
 Ala Glu Ile Leu Asp Leu Val Leu Phe Leu Gln Lys Ala Gly Ala Asp
 195 200 205
 Ile Thr Thr Asp Asn Asp Arg Thr Ile Asp Ile Phe Gly Thr Gly Gly
 210 215 220
 Leu Gly Ser Val Asp His Thr Ile Leu Pro Asp Lys Ile Glu Ala Ala
 225 230 235 240
 Ser Phe Gly Met Ala Ala Val Val Ser Gly Gly Arg Val Phe Val Arg
 245 250 255
 Asn Ala Lys Gln Glu Leu Leu Ile Pro Phe Leu Lys Met Leu Arg Ser
 260 265 270
 Ile Gly Gly Gly Phe Leu Val Ser Glu Ser Gly Ile Glu Phe Phe Gln
 275 280 285
 Glu Arg Pro Leu Val Gly Gly Val Val Leu Glu Thr Asp Val His Pro
 290 295 300
 Gly Phe Leu Thr Asp Trp Gln Gln Pro Phe Ala Val Leu Leu Ser Gln
 305 310 315 320
 Ala Gln Gly Ser Ser Val Ile His Glu Thr Val His Glu Asn Arg Leu
 325 330 335
 Gly Tyr Leu His Gly Leu Gln His Met Gly Ala Glu Cys Gln Leu Phe
 340 345 350
 His Gln Cys Leu Ser Thr Lys Ala Cys Arg Tyr Ala Ile Gly Asn Phe
 355 360 365

Pro His Ser Ala Val Ile His Gly Ala Thr Pro Leu Trp Ala Ser His
 370 375 380
 Leu Val Ile Pro Asp Leu Arg Ala Gly Phe Ala Tyr Val Met Ala Ala
 385 390 395 400
 Leu Ile Ala Glu Gly Gly Ser Ile Ile Glu Asn Thr His Leu Leu
 405 410 415
 Asp Arg Gly Tyr Thr Asn Trp Val Gly Lys Leu Arg Ser Leu Gly Ala
 420 425 430
 Lys Ile Gln Ile Phe Asp Met Glu Gln Glu Glu Leu Thr Thr Ser Pro
 435 440 445
 Lys Ser Leu Ala Leu Arg Asp Ala Ser Leu
 450 455

<210>611

<211>96

<212>PRT

<213>Chlamydia pneumoniae

<400>611

His Asn Asp Met Pro Trp Tyr Leu Ser Thr Asp Glu Lys Ala Asp Thr
 1 5 10 15
 Gln Leu Pro Cys Ala Glu Asp His Glu Gly Ser Arg Gly Asp Phe His
 20 25 30
 Gly Gln Ser His Gly Leu Leu Lys Ile Pro Glu Pro Val Ile Val Glu
 35 40 45
 Leu Arg Arg Val Val Ala Ser Pro Ser Gly Thr Leu Asp Glu His Arg
 50 55 60
 Phe Pro Arg Gln His Leu Pro Pro Arg Gly Val Leu Glu Lys Ile Leu
 65 70 75 80
 Phe Pro Thr Arg Arg Pro Lys Ile Leu Arg Leu Trp Ser Ala Thr Ser
 85 90 95

<210>612

<211>183

<212>PRT

<213>Chlamydia pneumoniae

<400>612

Ile Met Ala Ala Pro Ile Asn Gln Pro Ser Thr Thr Thr Gln Ile Thr
 1 5 10 15
 Gln Thr Gly Gln Thr Thr Thr Thr Thr Val Gly Ser Leu Gly Glu
 20 25 30
 His Ser Val Thr Thr Thr Gly Ser Gly Ala Ala Ala Gln Thr Ser Gln
 35 40 45
 Thr Val Thr Leu Ile Ala Asp His Glu Met Gln Asp Ile Ala Ser Gln
 50 55 60
 Asp Gly Ser Ala Val Ser Phe Ser Ala Glu His Ser Phe Ser Thr Leu
 65 70 75 80
 Pro Pro Glu Thr Gly Ser Val Gly Ala Thr Ala Gln Ser Ala Gln Ser
 85 90 95
 Ala Gly Leu Phe Ser Leu Ser Gly Arg Thr Gln Arg Arg Asp Ser Glu
 100 105 110
 Ile Ser Ser Ser Ser Asp Gly Ser Ser Ile Ser Arg Thr Ser Ser Asn
 115 120 125
 Ala Ser Ser Gly Glu Thr Ser Arg Ala Glu Ser Ser Pro Asp Leu Gly
 130 135 140
 Asp Leu Asp Ser Leu Ser Gly Ser Glu Arg Ala Glu Gly Ala Glu Asp
 145 150 155 160
 Leu Lys Asp Leu Glu Ala Tyr Leu Lys Val Arg Phe His Ile Met Ile
 165 170 175
 Leu Pro Ile Lys Arg Leu Phe
 180

<210>613

<211>550

<212>PRT

<213>Chlamydia pneumoniae

<400>613

Met Lys Pro Arg Ser Ser Phe Ile Phe Val Arg Asn Gly Asp Trp Ser

1 5 10 15
 Thr Ala Glu Ser Ile Lys Val Ser Asn Ala Lys Thr Lys Glu Asn Ile
 20 25 30
 Thr Lys Pro Ala Asp Leu Glu Met Cys Ile Ala Lys Phe Cys Val Gly
 35 40 45
 Tyr Glu Thr Ile His Ser Asp Trp Thr Gly Arg Val Lys Pro Thr Met
 50 55 60
 Glu Glu Arg Ser Gly Ala Thr Gly Asn Tyr Asn His Leu Met Leu Ser
 65 70 75 80
 Met Lys Phe Lys Thr Ala Val Val Tyr Gly Pro Trp Asn Ala Lys Glu
 85 90 95
 Ser Ser Ser Gly Tyr Thr Pro Ser Ala Trp Arg Arg Gly Ala Lys Val
 100 105 110
 Glu Thr Gly Pro Ile Trp Asp Asp Val Gly Gly Leu Lys Gly Ile Asn
 115 120 125
 Trp Lys Thr Thr Pro Ala Pro Asp Phe Ser Phe Ile Asn Glu Thr Pro
 130 135 140
 Gly Gly Gly Ala His Ser Thr Ser His Thr Gly Pro Gly Thr Pro Val
 145 150 155 160
 Gly Ala Thr Val Val Pro Asn Val Asn Val Asn Leu Gly Gly Ile Lys
 165 170 175
 Val Asp Leu Gly Gly Ile Asn Leu Gly Gly Ile Thr Thr Asn Val Thr
 180 185 190
 Thr Glu Glu Gly Gly Gly Thr Asn Ile Thr Ser Thr Lys Ser Thr Ser
 195 200 205
 Thr Asp Asp Lys Val Ser Ile Thr Ser Thr Gly Ser Gln Ser Thr Ile
 210 215 220
 Glu Glu Asp Thr Ile Gln Phe Asp Asp Pro Gly Gln Gly Glu Asp Asp
 225 230 235 240
 Asn Ala Ile Pro Gly Thr Asn Thr Pro Pro Pro Pro Gly Pro Pro Pro
 245 250 255
 Asn Leu Ser Ser Ser Arg Leu Leu Thr Ile Ser Asn Ala Ser Leu Asn
 260 265 270
 Gln Val Leu Gln Asn Val Arg Gln His Leu Asn Thr Ala Tyr Asp Ser
 275 280 285
 Asn Gly Asn Ser Val Ser Asp Leu Asn Gln Asp Leu Gly Gln Val Val
 290 295 300
 Lys Asn Ser Glu Asn Gly Val Asn Phe Pro Thr Val Ile Leu Pro Lys
 305 310 315 320
 Thr Thr Gly Asp Thr Asp Pro Ser Gly Gln Ala Thr Gly Gly Val Thr
 325 330 335
 Glu Gly Gly Gly His Ile Arg Asn Ile Ile Gln Arg Asn Thr Gln Ser
 340 345 350
 Thr Gly Gln Ser Glu Gly Ala Thr Pro Thr Pro Gln Pro Thr Ile Ala
 355 360 365
 Lys Ile Val Thr Ser Leu Arg Lys Ala Asn Val Ser Ser Ser Ser Val
 370 375 380
 Leu Pro Gln Pro Gln Val Ala Thr Thr Ile Thr Pro Gln Ala Arg Thr
 385 390 395 400
 Ala Ser Thr Ser Thr Thr Ser Ile Gly Thr Gly Thr Glu Ser Thr Ser
 405 410 415
 Thr Thr Ser Thr Gly Thr Gly Thr Gly Ser Val Ser Thr Gln Ser Thr
 420 425 430
 Gly Val Gly Thr Pro Thr Thr Thr Thr Arg Ser Thr Gly Thr Ser Ala
 435 440 445
 Thr Thr Thr Thr Ser Ser Ala Ser Thr Gln Thr Pro Gln Ala Pro Leu
 450 455 460
 Pro Ser Gly Thr Arg His Val Ala Thr Ile Ser Leu Val Arg Asn Ala
 465 470 475 480
 Ala Gly Arg Ser Ile Val Leu Gln Gln Gly Gly Arg Ser Gln Ser Phe
 485 490 495
 Pro Ile Pro Pro Ser Gly Thr Gly Thr Gln Asn Met Gly Ala Gln Leu
 500 505 510
 Trp Ala Ala Ala Ser Gln Val Ala Ser Thr Leu Gly Gln Val Val Asn

515 520 525
 Gln Ala Ala Thr Ala Gly Ser Gln Pro Ser Ser Arg Arg Ser Ser Pro
 530 535 540
 Thr Ser Pro Arg Arg Lys
 545 550
 <210>614
 <211>96
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>614
 Asp Arg Pro Pro Cys Cys Asn Thr Ile Asp Leu Pro Ala Ala Leu Arg
 1 5 10 15
 Thr Lys Glu Ile Val Ala Thr Cys Leu Val Pro Glu Gly Arg Gly Ala
 20 25 30
 Trp Gly Val Cys Val Glu Ala Asp Asp Val Val Val Val Ala Glu Val
 35 40 45
 Pro Val Asp Arg Val Val Val Val Gly Val Pro Thr Pro Val Leu Cys
 50 55 60
 Val Glu Thr Leu Pro Val Pro Val Pro Val Leu Val Val Asp Val Leu
 65 70 75 80
 Ser Val Pro Val Pro Met Leu Val Val Asp Val Leu Ala Val Leu Ala
 85 90 95

<210>615
 <211>241
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>615
 Val Glu Asp Met Ala Gly His Ser Lys Trp Ala Asn Thr Lys His Arg
 1 5 10 15
 Lys Glu Arg Ala Asp His Lys Lys Gly Lys Ile Phe Ser Arg Ile Ile
 20 25 30
 Lys Glu Leu Ile Ser Ala Val Lys Leu Gly Gly Ala Asp Pro Lys Ser
 35 40 45
 Asn Ala Arg Leu Arg Met Val Ile Gln Lys Ala Lys Glu Asn Asn Ile
 50 55 60
 Pro Asn Glu Asn Ile Glu Arg Asn Leu Lys Lys Ala Thr Ser Ala Glu
 65 70 75 80
 Gln Lys Asn Phe Glu Glu Val Thr Tyr Glu Leu Tyr Gly His Gly Gly
 85 90 95
 Val Gly Ile Ile Val Glu Ala Met Thr Asp Asn Lys Asn Arg Thr Ala
 100 105 110
 Ser Asp Met Arg Ile Ala Ile Asn Lys Arg Gly Gly Ser Leu Val Glu
 115 120 125
 Pro Gly Ser Val Leu Tyr Asn Phe Ala Arg Lys Gly Ala Cys Thr Val
 130 135 140
 Ala Lys Ser Ser Ile Asp Glu Glu Val Ile Phe Ser Tyr Ala Ile Glu
 145 150 155 160
 Ala Gly Ala Glu Asp Leu Asp Thr Glu Asp Glu Glu Asn Phe Leu Val
 165 170 175
 Ile Cys Ala Pro Ser Glu Leu Ala Ser Val Lys Glu Lys Leu Ile Ser
 180 185 190
 Gln Gly Ala Thr Cys Ser Glu Asp Arg Leu Ile Tyr Leu Pro Leu Arg
 195 200 205
 Leu Val Asp Cys Asp Glu Lys Asp Gly Glu Ala Asn Leu Ala Leu Ile
 210 215 220
 Asp Trp Leu Glu Gln Ile Glu Asp Val Asp Asp Val Tyr His Asn Met
 225 230 235 240
 Ser

<210>616
 <211>195
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>616

Ser Ala Glu Arg Gly Phe Arg His Pro Ile Val Met Val Glu Thr Val
 1 5 10 15
 Leu His Asn Phe Gln Arg Tyr Leu Ser Lys Tyr Leu Tyr Arg Val Phe
 20 25 30
 Arg Phe Pro Cys Arg Gln Lys Thr Phe Leu Ser Ser His Arg Val Leu
 35 40 45
 Ala Arg Pro Ser Phe Pro Val Asp Tyr Cys Pro Gly Lys Ile Tyr Asp
 50 55 60
 Leu Gln Glu Ile Tyr Glu Leu Asn Ala Gln Leu Phe Gln Gly Ala
 65 70 75 80
 Leu Arg Leu Gln Ile Gly Trp Phe Gly Arg Lys Ala Thr Arg Lys Gly
 85 90 95
 Lys Ser Val Val Leu Gly Leu Phe His Glu Asn Glu Gln Leu Ile Arg
 100 105 110
 Ile His Arg Ser Leu Asp Arg Gln Glu Ile Pro Arg Phe Phe Met Glu
 115 120 125
 Tyr Leu Val Tyr His Glu Met Val His Ser Val Val Pro Arg Glu Tyr
 130 135 140
 Ser Leu Ser Gly Arg Ser Ile Phe His Gly Lys Lys Phe Lys Glu Tyr
 145 150 155 160
 Glu Gln Arg Phe Pro Leu Tyr Asp Arg Ala Val Ala Trp Glu Lys Ala
 165 170 175
 Asn Ala Tyr Leu Leu Arg Gly Tyr Lys Lys Arg Val Gly Gly Tyr
 180 185 190
 Gly Arg Ala
 195

<210>617

<211>188

<212>PRT

<213>Chlamydia pneumoniae

<400>617

Ser Ile Phe Gly Arg Val Trp Xaa Xaa Phe Met Thr Ala Glu Lys Gln
 1 5 10 15
 Asn Thr Gly Ile Leu Gly Leu Glu Ile Arg Tyr Thr Leu Pro Ser Asp
 20 25 30
 Ala Thr Tyr Met Leu Lys Trp Leu Asn Asp Pro Lys Ile Leu Arg Gly
 35 40 45
 Phe Pro Ile Gln Thr Glu Ala Glu Ile Arg Glu Thr Val Asn Phe Trp
 50 55 60
 Val Gly Phe Tyr Arg Tyr His Ser Ser Leu Thr Ala Val Tyr Asn Gly
 65 70 75 80
 Asn Val Ala Gly Val Ala Thr Leu Val Leu Asn Pro Tyr Val Lys Val
 85 90 95
 Ser His His Ala Leu Ile Ser Ile Ile Val Gly Glu Glu Phe Arg Asn
 100 105 110
 Lys Gly Ile Gly Thr Ala Leu Leu Asn Asn Leu Ile His Leu Ala Lys
 115 120 125
 Thr Arg Phe Lys Leu Glu Val Leu Tyr Leu Glu Val Tyr Glu Gly Asn
 130 135 140
 Pro Ala Leu His Leu Tyr Gln Arg Phe Gly Phe Val Glu Val Gly Arg
 145 150 155 160
 Gln Asn Arg Phe Tyr Lys Asp Glu Ile Gly Tyr Leu Ala Lys Thr Thr
 165 170 175
 Met Glu Lys Gly Ser Ile Glu Arg Arg Lys Arg Phe
 180 185

<210>618

<211>139

<212>PRT

<213>Chlamydia pneumoniae

<400>618

Asp Glu Ile Arg Pro Asn Asp Leu Arg Ile Asp Thr Phe Arg Ser Ser
 1 5 10 15
 Gly Ala Gly Gly Gln His Val Asn Val Thr Glu Ser Ala Val Arg Ile
 20 25 30

Thr His Leu Pro Ser Gly Val Val Val Ser Cys Gln Asn Glu Arg Ser
 35 40 45
 Gln Ile Gln Asn Arg Glu Ser Cys Met Lys Met Leu Gln Ala Lys Leu
 50 55 60
 Tyr Gln Gln Val Leu Gln Glu Arg Leu Glu Lys Gln Ser Leu Asp Arg
 65 70 75 80
 Lys Asp Lys Lys Glu Ile Ala Trp Gly Ser Gln Ile Arg Asn Tyr Val
 85 90 95
 Phe Gln Pro Tyr Thr Leu Val Lys Asp Val Arg Thr Gly His Glu Thr
 100 105 110
 Gly Asn Val Gln Ala Met Leu Asp Gly Glu Leu Leu Asp Glu Phe Ile
 115 120 125
 Lys Ala Tyr Leu Ala Glu Phe Gly Xaa Val Ser
 130 135

<210>619

<211>211

<212>PRT

<213>Chlamydia pneumoniae

<400>619

Leu Arg Gly Leu Phe Asp Leu Asp Lys Lys Gln Lys Glu Leu Gln Val
 1 5 10 15
 Leu Glu Glu Glu Ser Ser Glu Glu Asn Phe Trp Gln Asp Ser Val His
 20 25 30
 Ala Gly Lys Ile Ser Glu Gln Ile Val Ser Leu Arg Arg Gln Ile Gln
 35 40 45
 Glu Tyr Gln Glu Leu Lys Ser Lys Ile Asp Ala Ile Glu Phe Phe Leu
 50 55 60
 Glu Asp Ala Asp Ala Leu Glu Asp Pro Ala Ile Cys Glu Asp Leu Glu
 65 70 75 80
 Lys Glu Phe Leu Phe Cys Glu Lys Lys Leu Ala Val Trp Glu Thr Gln
 85 90 95
 Arg Leu Leu Ser Gly Glu Ala Asp Lys Asn Ser Cys Phe Leu Thr Ile
 100 105 110
 Asn Ala Gly Ala Gly Gly Thr Glu Ser Cys Asp Trp Val Glu Met Leu
 115 120 125
 Phe Arg Met Tyr Ser Arg Trp Ala Thr Lys His Gln Trp Ala Leu Glu
 130 135 140
 Val Val Asp Arg Leu Asp Gly Glu Val Val Gly Ile Lys His Val Thr
 145 150 155 160
 Val Lys Phe Ser Gly Met Tyr Ala Tyr Gly Tyr Ala Lys Ala Glu Arg
 165 170 175
 Gly Val His Arg Leu Val Arg Ile Ser Pro Phe Asp Ser Asn Gly Lys
 180 185 190
 Arg His Thr Ser Phe Ala Ser Val Asp Val Phe Pro Glu Ile Asp Xaa
 195 200 205
 Arg Leu Arg
 210

<210>620

<211>90

<212>PRT

<213>Chlamydia pneumoniae

<400>620

Glu Ser Pro Met Ser Gln Lys Asn Lys Asn Ser Ala Phe Met His Pro
 1 5 10 15
 Val Asn Ile Ser Thr Asp Leu Ala Val Ile Val Gly Lys Gly Pro Met
 20 25 30
 Pro Arg Thr Glu Ile Val Lys Lys Val Trp Glu Tyr Ile Lys Lys His
 35 40 45
 Asn Cys Gln Asp Gln Lys Asn Lys Arg Asn Ile Leu Pro Asp Ala Asn
 50 55 60
 Leu Ala Lys Val Phe Gly Ser Ser Asp Pro Ile Asp Met Phe Gln Met
 65 70 75 80
 Thr Lys Ala Leu Ser Lys His Ile Val Lys
 85 90

<210>621

<211>218

<212>PRT

<213>Chlamydia pneumoniae

<400>621

Ser Ala Thr Ser His Val Pro Met Ile Lys Ser Ser Leu Ile Leu Leu
 1 5 10 15
 Ser Gly Gly Gln Gly Thr Arg Phe Gly Ser Lys Ile Pro Lys Gln Tyr
 20 25 30
 Leu Pro Leu Asn Gly Thr Pro Leu Val Leu His Ser Leu Lys Ile Leu
 35 40 45
 Ser Ser Leu Pro Gln Ile Ala Glu Val Ile Val Val Cys Asp Pro Ser
 50 55 60
 Tyr Gln Glu Thr Phe Gln Glu Tyr Pro Val Ser Phe Ala Ile Pro Gly
 65 70 75 80
 Glu Arg Arg Gln Asp Ser Val Phe Ser Gly Leu Gln Gln Val Ser Tyr
 85 90 95
 Pro Trp Val Ile Ile His Asp Gly Ala Arg Pro Phe Ile Tyr Pro Asp
 100 105 110
 Glu Ile His Asp Leu Leu Glu Thr Ala Glu Lys Ile Gly Ala Thr Ala
 115 120 125
 Leu Ala Ser Pro Ile Pro Tyr Thr Ile Lys Gln Arg Asn Pro Val Arg
 130 135 140
 Thr Leu Asp Arg Asp Asn Leu Ala Ile Ile His Thr Pro Gln Cys Ile
 145 150 155 160
 Lys Thr Glu Ile Leu Arg Glu Gly Leu Ala Leu Ala Lys Glu Lys Gln
 165 170 175
 Leu Thr Leu Val Asp Asp Ile Glu Ala Ala Glu Ile Ile Gly Lys Pro
 180 185 190
 Ser Gln Leu Val Phe Asn Lys His Pro Gln Ile Lys Ile Ser Tyr Pro
 195 200 205
 Glu Asp Leu Thr Ile Ala Gln Ala Leu Leu
 210 215

<210>622

<211>267

<212>PRT

<213>Chlamydia pneumoniae

<400>622

Met Thr Lys Val Ala Leu Leu Ile Ala Tyr Gln Gly Thr Ala Tyr Ser
 1 5 10 15
 Gly Trp Gln Gln Gln Pro Asn Asp Leu Ser Ile Gln Glu Val Ile Glu
 20 25 30
 Ser Ser Leu Lys Lys Ile Thr Lys Thr Arg Thr Pro Leu Ile Ala Ser
 35 40 45
 Gly Arg Thr Asp Ala Gly Val His Ala Tyr Gly Gln Val Ala His Phe
 50 55 60
 Arg Ala Pro Asp His Pro Leu Phe Ala Asn Ala Asn Leu Thr Lys Lys
 65 70 75 80
 Ala Leu Asn Ala Ile Leu Pro Lys Asp Ile Val Ile Arg Asp Val Ala
 85 90 95
 Leu Phe Asp Asp Asn Phe His Ala Arg Tyr Leu Thr Ile Ala Lys Glu
 100 105 110
 Tyr Arg Tyr Ser Leu Ser Arg Leu Ala Lys Pro Leu Pro Trp Gln Arg
 115 120 125
 His Phe Cys Tyr Thr Pro Arg His Pro Phe Ser Thr Glu Leu Met Gln
 130 135 140
 Glu Gly Ala Asn Leu Leu Ile Gly Thr His Asp Phe Ala Ser Phe Ala
 145 150 155 160
 Asn His Gly Arg Asp Tyr Asn Ser Thr Val Arg Thr Ile Tyr Thr Leu
 165 170 175
 Asp Ile Val Asp Lys Gly Asp Ser Leu Ser Ile Ile Cys Arg Gly Asn
 180 185 190
 Gly Phe Leu Tyr Lys Met Val Arg Asn Leu Val Gly Ala Leu Leu Asp
 195 200 205

Val Gly Lys Gly Ala Tyr Pro Pro Glu His Leu Leu Asp Ile Leu Glu
 210 215 220
 Gln Lys Asn Arg Arg Glu Gly Pro Ser Ala Ala Pro Ala Tyr Gly Leu
 225 230 235 240
 Ser Leu His His Val Cys Tyr Ser Ser Pro Tyr Asn Asn Phe Cys Cys
 245 250 255
 Glu Gln Cys Ser Val Ser Thr Ser Asn Glu Gly
 260 265
 <210>623
 <211>263
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>623
 Glu Gly Leu Arg Trp Arg Ser Val Lys Ser Phe Leu Arg Gln Cys Trp
 1 5 10 15
 Ile Tyr Ser Met Leu Val Ser Asp Glu Phe Gln Leu Cys Leu Arg Ser
 20 25 30
 Gly Met Tyr Leu Glu Asp Tyr Asp Val Phe Phe Phe Asp Leu Asp Gly
 35 40 45
 Leu Leu Val Asp Thr Glu Pro Cys Phe Tyr Arg Ala Phe Leu Gln Ala
 50 55 60
 Cys Ala Glu Phe Ser Leu Glu Val His Trp Asp Phe Ser Thr Tyr Tyr
 65 70 75 80
 Ser His Thr Thr Leu Gly Thr Glu Ile Phe Ser Lys Lys Phe Ile Glu
 85 90 95
 Gln Tyr Pro Gln Ala Gln Glu Tyr Met Ala Glu Ile Phe Ala Lys Arg
 100 105 110
 Leu Gln Ile Tyr Tyr Lys Ser Leu Glu His Ala Gly Pro Ala Leu Met
 115 120 125
 Pro Gly Val Glu Ala Phe Ile Glu Leu Val Leu Ser Leu Asn Lys Thr
 130 135 140
 Phe Gly Val Val Thr Asn Ser Pro Arg Asp Ala Thr His Thr Leu Arg
 145 150 155 160
 Thr Met Tyr Pro Ile Leu Asn Lys Phe Leu Phe Trp Val Thr Arg Glu
 165 170 175
 Asn Tyr Ala Arg Pro Lys Pro Tyr Gly Asp Ser Tyr Asp Tyr Ala Tyr
 180 185 190
 Arg Thr Phe Ala Arg Glu Gly Met Lys Val Ile Gly Phe Glu Asp Ser
 195 200 205
 Val Lys Gly Leu Arg Ala Leu Ser Lys Ile Pro Ala Thr Leu Val Cys
 210 215 220
 Ile Asn Ser Met Ala Glu Ile Thr Pro Glu Asp Tyr Pro Glu Leu Lys
 225 230 235 240
 Gly Lys Glu Phe Phe Ser Tyr Pro Ser Phe Asp Val Leu Thr Glu His
 245 250 255
 Cys Ser Gln Gln Lys Leu Leu
 260

<210>624
 <211>291
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>624

Lys Asn Pro Asn Ala Leu Leu Lys Lys Ile Gln His Arg Leu Val Lys
 1 5 10 15
 Met His Asp Lys Asn Lys Val Leu Tyr Leu Gln Ala Asn His Leu Asn
 20 25 30
 Gln Lys Arg Lys Arg His Asn Pro Leu Asn Thr Tyr His Ser Ser Asn
 35 40 45
 Thr Thr Glu Thr Arg Arg Leu Pro Thr Tyr Tyr Lys Ser Asn Ile Val
 50 55 60
 Leu Lys Met Ile Leu Arg Ile Ser Thr Val Ser Leu Leu Thr Ser Cys
 65 70 75 80
 Ser Phe Ser Lys Asn Ser Arg Thr Cys Phe Val Thr Pro Glu Arg Ile
 85 90 95

Thr Ser Gln Lys Asp Cys Pro Val Leu Leu His Pro Lys Ser Thr Thr
 100 105 110
 Ile Ser Pro Leu Tyr Asp Trp Ile Ser Pro Asn Arg Glu Val Ile
 115 120 125
 Thr Ala Tyr Ser Phe Tyr Cys Arg Gly Gln Gly Asn Ser Ile Ile Thr
 130 135 140
 Pro Glu Gly Val Leu Tyr Asp Cys Asp Gly Leu His His Ser Ile Thr
 145 150 155 160
 Lys Glu Glu Phe Arg Tyr Ile His Pro Arg Leu Ile Glu Val Val Arg
 165 170 175
 Leu Leu Gln Gln Asp His Pro Lys Val Ser Ile Ile Glu Ala Phe Cys
 180 185 190
 Cys Pro Lys His Phe His Phe Leu Glu Ala Ser Gly Ile Ser Leu Ser
 195 200 205
 Gln Leu His Leu Gln Gly Thr Ala Ala Thr Phe Ala Leu Asp Pro Pro
 210 215 220
 Leu Pro Met Glu Lys Leu Leu Ala Thr Ile Lys Lys Leu Tyr Lys Lys
 225 230 235 240
 Asn Ser Asp Pro Ser Leu Ser Asn Phe Ile Val Thr Glu Ala Thr Leu
 245 250 255
 Thr Asn Pro Glu Leu Arg Leu Thr Gln Gln Asp Leu Gly Ser His Thr
 260 265 270
 Glu Ile Thr Val Glu Ile Leu Asp Asn Leu Gln Asn Lys Glu Ala Leu
 275 280 285
 Ser Ser Ala
 290

<210>625

<211>123

<212>PRT

<213>Chlamydia pneumoniae

<400>625

Ile Val Leu Ser Phe Phe Leu Gly Lys Thr Lys Val Thr Pro Arg Phe
 1 5 10 15
 Leu Met Asn Glu Arg Thr Leu Leu Leu Leu Lys Lys Lys Lys Gly
 20 25 30
 Leu Phe Leu Ala Ile Leu Asp Leu Thr Gln Thr Glu Ser Ser Leu Thr
 35 40 45
 Thr Pro Glu Leu Glu Lys Val Leu Lys Gln Lys Lys Ile Phe Leu Ser
 50 55 60
 Cys Ile Asp Arg Val Asp Leu Gln Ile Lys Glu Phe Arg His Ala Phe
 65 70 75 80
 Ser Ser Glu Leu Pro Gln Asp Ile Gln Glu Leu Glu Glu Ile Arg
 85 90 95
 Asp Val Ile Ile Arg Ile Leu Asp Thr Asp Lys Arg Asn Tyr Ala Gln
 100 105 110
 Lys Lys Lys Glu Phe Gly Ile Tyr Glu Arg Pro
 115 120

<210>626

<211>380

<212>PRT

<213>Chlamydia pneumoniae

<400>626

Ile Arg Ile Asn Ala Thr Met His Arg Lys Lys Arg Asn Leu Val Phe
 1 5 10 15
 Met Asn Val Pro Asp Ser Lys Asn Leu His Pro Pro Ala Tyr Glu Leu
 20 25 30
 Leu Glu Ile Lys Ala Arg Ile Thr Gln Ser Tyr Lys Glu Ala Ser Ala
 35 40 45
 Ile Leu Thr Ala Ile Pro Asp Gly Ile Leu Leu Leu Ser Glu Thr Gly
 50 55 60
 His Phe Leu Ile Cys Asn Ser Gln Ala Arg Glu Ile Leu Gly Ile Asp
 65 70 75 80
 Glu Asn Leu Glu Ile Leu Asn Arg Ser Phe Thr Asp Val Leu Pro Asp
 85 90 95

Thr Cys Leu Gly Phe Ser Ile Gln Glu Ala Leu Glu Ser Leu Lys Val
 100 105 110
 Pro Lys Thr Leu Arg Leu Ser Leu Cys Lys Glu Ser Lys Glu Lys Glu
 115 120 125
 Val Glu Leu Phe Ile Arg Lys Asn Glu Ile Ser Gly Tyr Leu Phe Ile
 130 135 140
 Gln Ile Arg Asp Arg Ser Asp Tyr Lys Gln Leu Glu Asn Ala Ile Glu
 145 150 155 160
 Arg Tyr Lys Asn Ile Ala Glu Leu Gly Lys Met Thr Ala Thr Leu Ala
 165 170 175
 His Glu Ile Arg Asn Pro Leu Ser Gly Ile Val Gly Phe Ala Ser Ile
 180 185 190
 Leu Lys Lys Glu Ile Ser Ser Pro Arg His Gln Arg Met Leu Ser Ser
 195 200 205
 Ile Ile Ser Gly Thr Arg Ser Leu Asn Asn Leu Val Ser Ser Met Leu
 210 215 220
 Glu Tyr Thr Lys Ser Gln Pro Leu Asn Leu Lys Ile Ile Asn Leu Gln
 225 230 235 240
 Asp Phe Phe Ser Ser Leu Ile Pro Leu Leu Ser Val Ser Phe Pro Asn
 245 250 255
 Cys Lys Phe Val Arg Glu Gly Ala Gln Pro Leu Phe Arg Ser Ile Asp
 260 265 270
 Pro Asp Arg Met Asn Ser Val Val Trp Asn Leu Val Lys Asn Ala Val
 275 280 285
 Glu Thr Gly Asn Ser Pro Ile Thr Leu Thr Leu His Thr Ser Gly Asp
 290 295 300
 Ile Ser Val Thr Asn Pro Gly Thr Ile Pro Ser Glu Ile Met Asp Lys
 305 310 315 320
 Leu Phe Thr Pro Phe Phe Thr Thr Lys Arg Glu Gly Asn Gly Leu Gly
 325 330 335
 Leu Ala Glu Ala Gln Lys Ile Ile Arg Leu His Gly Gly Asp Ile Gln
 340 345 350
 Leu Lys Thr Ser Asp Ser Ala Val Ser Phe Phe Ile Ile Pro Glu
 355 360 365
 Leu Leu Ala Ala Leu Pro Lys Glu Arg Ala Ala Ser
 370 375 380

<210>627

<211>216

<212>PRT

<213>Chlamydia pneumoniae

<400>627

Ile His Ser Phe Leu Ser Thr Arg Thr Val Cys Val Arg Gln Lys Lys
 1 5 10 15
 Leu Arg Lys Ile Ser Lys Glu Leu Gln Arg Tyr Ser Arg Leu Gln
 20 25 30
 Glu Glu Lys Gln Val Lys Glu Lys Ile Leu Glu Glu Ser Met Asn His
 35 40 45
 Phe Ala Asp Leu Phe Glu Lys Ala Gln Lys Glu Asn Met Ala Tyr Lys
 50 55 60
 Lys Lys Leu Ala Asp Leu Glu Gly Ala Ala Ala Pro Thr Glu Ile Gly
 65 70 75 80
 Glu Asp Asp Asp Trp Val Leu Thr Asp Ser Ala Ser Leu Ser Gln Lys
 85 90 95
 Lys Ile Arg Glu Leu Val Glu Glu Asn Gln Glu Leu Leu Lys Ala Leu
 100 105 110
 Ala Phe Lys Ser Asn Glu Leu Thr Gln Leu Val Ala Asp Ala Val Glu
 115 120 125
 Ala Glu Lys Glu Ile Ser Lys Leu Arg Glu His Ile Glu Glu Gln Lys
 130 135 140
 Glu Gly Leu Arg Ala Leu Asp Lys Met His Ala Gln Ala Ile Lys Asp
 145 150 155 160
 Cys Glu Val Ala Gln Arg Lys Cys Cys Asp Leu Glu Ser Leu Leu Ser
 165 170 175
 Pro Val Arg Glu Asp Ala Gly Met Arg Phe Glu Leu Glu Val Glu Leu

180 185 190
 Gln Arg Leu Gln Glu Glu Asn Ala Gln Leu Arg Ala Glu Val Glu Arg
 195 200 205
 Leu Glu Gln Glu Gln Phe Gln Gly
 210 215
 <210>628
 <211>212
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>628
 Gly Val Gly Ser Met Thr Ser Arg Arg Asp Ala Gly Arg Leu Tyr Asn
 1 5 10 15
 Val Phe Asn Gln Ser Gln Lys Asp Ile Gln Arg Ala His Asp Arg Glu
 20 25 30
 Ala Ser Gln Arg Ala Cys Glu Gly Thr Glu Met Asp Cys Ala Glu Arg
 35 40 45
 Gln Gln Leu Glu Lys Asp Leu Arg Arg Gln Leu Lys Ser Met Gln Glu
 50 55 60
 Trp Ile Glu Met Arg Gly Thr Ile His Gln Gln Glu Lys Ala Trp Arg
 65 70 75 80
 Lys Gln Asn Ala Lys Leu Glu Arg Leu Gln Glu Asp Leu Arg Leu Thr
 85 90 95
 Gly Ile Ala Phe Asp Glu Gln Ser Leu Phe Tyr Arg Glu Tyr Lys Glu
 100 105 110
 Lys Tyr Leu Ser Gln Lys Leu Asp Met Gln Lys Ile Leu Gln Glu Val
 115 120 125
 Asn Ala Glu Lys Ser Glu Lys Ala Cys Leu Glu Ser Leu Val His Asp
 130 135 140
 Tyr Glu Lys Gln Leu Glu Gln Lys Asp Ala Asn Leu Lys Lys Ala Ala
 145 150 155 160
 Ala Val Trp Glu Glu Glu Leu Gly Lys Gln Gln Gln Glu Asp Tyr Glu
 165 170 175
 Gln Thr Gln Glu Ile Arg Arg Leu Asn Thr Phe Ile Leu Glu Tyr Gln
 180 185 190
 Asp Ser Leu Arg Glu Ala Glu Lys Val Glu Lys Asp Phe Gln Arg Ala
 195 200 205
 Thr Thr Lys Val
 210
 <210>629
 <211>290
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>629
 Ile Ser Leu Arg Arg Lys Ile Leu Arg Pro Asn Asn Phe Ser Ile Gly
 1 5 10 15
 Asp Cys Ser Ser Asn Met Ala Thr Pro Ala Gln Lys Ser Pro Thr Phe
 20 25 30
 Gln Asp Pro Ser Phe Val Arg Glu Leu Gly Ser Asn His Pro Val Phe
 35 40 45
 Ser Pro Leu Thr Leu Glu Glu Arg Gly Glu Met Ala Ile Ala Arg Val
 50 55 60
 Gln Gln Cys Gly Trp Asn His Thr Ile Val Lys Val Ser Leu Ile Ile
 65 70 75 80
 Leu Ala Leu Leu Thr Ile Leu Gly Gly Gly Leu Leu Val Gly Leu Leu
 85 90 95
 Pro Ala Val Pro Met Phe Ile Gly Thr Gly Leu Ile Ala Leu Gly Ala
 100 105 110
 Val Ile Phe Ala Leu Ala Leu Ile Leu Cys Leu Tyr Asp Ser Gln Gly
 115 120 125
 Leu Pro Glu Glu Leu Pro Pro Val Pro Glu Pro Gln Gln Ile Gln Ile
 130 135 140
 Glu Asp Leu Arg Asn Glu Thr Arg Glu Val Leu Glu Gly Thr Leu Leu
 145 150 155 160
 Glu Val Leu Leu Lys Asp Arg Asp Ala Lys Asp Pro Ala Val Pro Gln

165 170 175
 Val Val Val Asp Cys Glu Lys Arg Leu Gly Met Leu Asp Arg Lys Leu
 180 185 190
 Arg Arg Glu Glu Ile Leu Tyr Arg Ser Thr Ala His Leu Lys Asp
 195 200 205
 Glu Glu Arg Tyr Glu Phe Leu Leu Glu Leu Leu Glu Met Arg Ser Leu
 210 215 220
 Val Ala Asp Arg Leu Glu Phe Asn Arg Arg Ser Tyr Glu Arg Phe Val
 225 230 235 240
 Gln Gly Ile Met Thr Val Arg Ser Glu Glu Gly Glu Lys Glu Ile Ser
 245 250 255
 Arg Leu Gln Asp Leu Ile Ser Leu Gln Gln Gln Thr Val Gln Asp Leu
 260 265 270
 Arg Ser Arg Ile Asp Asp Glu Gln Lys Arg Cys Trp Thr Ala Leu Gln
 275 280 285
 Arg Ile
 290
 <210>630
 <211>337
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>630
 Pro Cys His Leu Arg His Glu Tyr Pro Asp Gly Ser Gly Leu Asp Leu
 1 5 10 15
 Ile Lys Ile Ile Lys Gln Ser Ser Pro His Thr Pro Val Leu Val Val
 20 25 30
 Thr Ala Tyr Gly Ser Ile Glu Asn Ala Val Glu Ala Met His Gln Gly
 35 40 45
 Ala Phe Asn Tyr Leu Thr Lys Pro Phe Ser Ser Glu Ala Leu Phe Ala
 50 55 60
 Phe Ile Ser Lys Ala Glu Glu Leu Lys Asn Leu Val His Glu Asn Leu
 65 70 75 80
 Phe Leu His Ser Gln Thr Thr Pro Asp Ser His Pro Leu Ile Ala Glu
 85 90 95
 Ser Lys Ala Met Lys Asp Leu Leu Ala Ile Ala Lys Lys Ala Ala Ser
 100 105 110
 Ser Ser Ala Asn Ile Phe Ile His Gly Glu Ser Gly Cys Gly Lys Glu
 115 120 125
 Val Leu Ser Phe Phe Ile His His Asn Ser Pro Arg Ala Asn His Pro
 130 135 140
 Tyr Ile Lys Val Asn Cys Ala Ala Ile Pro Glu Thr Leu Leu Glu Ser
 145 150 155 160
 Glu Leu Phe Gly His Glu Lys Gly Ala Phe Thr Gly Ala Thr Thr Lys
 165 170 175
 Lys Ala Gly Arg Phe Glu Leu Ala His Lys Gly Thr Leu Leu Leu Asp
 180 185 190
 Glu Ile Thr Glu Val Pro Val Asn Leu Gln Ala Lys Leu Leu Arg Ala
 195 200 205
 Ile Gln Glu Lys Glu Ile Glu His Leu Gly Gly Thr Lys Thr Leu Ser
 210 215 220
 Val Asp Val Arg Ile Leu Ala Thr Ser Asn Arg Lys Leu Lys Glu Ala
 225 230 235 240
 Ile Asp Asp Lys Ser Phe Arg Gln Asp Leu Tyr Tyr Arg Leu Asn Val
 245 250 255
 Ile Pro Leu His Leu Pro Pro Leu Arg Asp Arg Gln Asp Asp Ile Leu
 260 265 270
 Pro Leu Ala Asn Tyr Phe Leu Asn Lys Phe Cys Arg Met Asn Asn Thr
 275 280 285
 Pro Leu Lys Thr Leu Ser Pro Lys Ala Gln Glu Leu Leu Leu Asn Tyr
 290 295 300
 Pro Trp Pro Gly Asn Ile Arg Glu Leu Ser Asn Val Leu Glu Arg Val
 305 310 315 320
 Val Ile Leu Glu Asn Thr Ser Leu Leu Thr Glu Asp Met Leu Ala Leu
 325 330 335

Ala

<210>631

<211>223

<212>PRT

<213>Chlamydia pneumoniae

<400>631

Ser Tyr Gly Glu Leu Phe Ile Leu Ser Thr Leu Leu Lys His His Val
 1 5 10 15
 Thr Leu Gly Asp Lys Met Arg Pro His Arg Lys His Val Ser Ser Lys
 20 25 30
 Ser Leu Ala Leu Lys Gln Ser Ala Ser Thr His Val Glu Ile Thr Thr
 35 40 45
 Lys Ala Phe Arg Leu Ser Met Pro Leu Lys Gln Leu Ile Leu Glu Lys
 50 55 60
 Ser Asp His Leu Pro Pro Met Glu Thr Ile Arg Val Val Leu Thr Ser
 65 70 75 80
 His Lys Asp Lys Leu Gly Thr Glu Val His Val Val Ala Ser His Gly
 85 90 95
 Lys Glu Ile Leu Gln Thr Lys Val His Asn Ala Asn Pro Tyr Thr Ala
 100 105 110
 Val Ile Asn Ala Phe Lys Lys Ile Arg Thr Met Ala Asn Lys His Ser
 115 120 125
 Asn Lys Arg Lys Asp Arg Thr Lys His Asp Leu Gly Leu Ala Ala Lys
 130 135 140
 Glu Glu Arg Ile Ala Ile Gln Glu Glu Gln Glu Asp Arg Leu Ser Asn
 145 150 155 160
 Arg Val Ala Ser Cys Arg Arg Pro Arg Cys Leu Gly Phe Ser Lys Asn
 165 170 175
 Ser Trp Val Cys Ser Arg Ile Ser Glu Lys Glu Asp Leu Gln Glu Lys
 180 185 190
 Asp Glu His Ser Tyr Ala Ile Ser Arg Arg Gly Tyr Pro Pro Ala Arg
 195 200 205
 Val Cys Arg Arg Lys Leu Pro Asp Leu Leu Glu Arg Ala Arg Ala
 210 215 220

<210>632

<211>254

<212>PRT

<213>Chlamydia pneumoniae

<400>632

Ser Ser Met Gln Ile Cys Val Thr Gly Val Val Leu Arg Ser Arg Pro
 1 5 10 15
 Leu Gly Lys Asn His Thr Leu Thr Thr Leu Phe Thr Pro Glu Gly Leu
 20 25 30
 Phe Thr Phe Ala Lys Gln Gly Gln Thr Leu Gln Cys Asp Tyr Arg
 35 40 45
 Glu Thr Leu Val Pro Ile Ser Leu Gly Lys Tyr Thr Leu His Arg Asn
 50 55 60
 Gly Ser Arg Leu Pro Lys Leu Thr His Gly Asp Ile Leu Asn Ala Phe
 65 70 75 80
 Glu Ala Ile Lys Gln Thr Tyr Ala Leu Leu Glu Ala Ser Gly Lys Met
 85 90 95
 Ile Gln Ala Leu Leu Ala Ser Gln Trp Lys Glu Lys Pro Ser His Lys
 100 105 110
 Leu Phe Ser Leu Phe Leu Asn Phe Leu His Arg Ile Pro Glu Ser Ser
 115 120 125
 Asn Pro Glu Phe Phe Ala Ala Ile Phe Val Leu Lys Leu Leu Gln Tyr
 130 135 140
 Glu Gly Ile Leu Asp Leu Thr Pro Ala Cys Ser Leu Cys Lys Ala Ser
 145 150 155 160
 Leu Pro Tyr Ala Cys Tyr Arg Tyr Gln Gly His Lys Leu Cys Lys Lys
 165 170 175
 His Gln His Lys Gln Ala Ile Ser Ile Glu Lys Glu Glu Glu Gln Ile
 180 185 190

Leu Gln Ala Ile Ile His Ala Lys Lys Phe Ser Glu Leu Leu Ala Ile
 195 200 205
 Ala Glu Phe Pro Ile Ala Ile Ala Glu Lys Ile Phe Tyr Leu Phe Asp
 210 215 220
 Ser Leu Gln Glu Glu Lys Lys Ser Glu Arg Asn Ser Ser Glu Asp Pro
 225 230 235 240
 Tyr His Glu Ile Leu Arg Leu Ser Lys Val Val His Pro Tyr
 245 250

<210>633

<211>207

<212>PRT

<213>Chlamydia pneumoniae

<400>633

Leu Phe Leu Tyr Gly Asp His Asn Leu Gly Phe Ala Cys Arg Tyr Leu
 1 5 10 15
 Phe Phe Phe Ile Val Leu Phe Ala Ser Gly Ser Phe Gly Asn Gln Leu
 20 25 30
 Leu Ser Val Pro Cys Trp Leu Ser Glu Glu Glu Ser Phe Tyr Thr His
 35 40 45
 Arg Phe Asp Phe Ser Lys Ser Tyr Pro Asp Met Glu Asn Met Glu Ile
 50 55 60
 Gln Ala Gln Arg Lys Lys Arg Val Glu Phe Asn Leu Thr Gly Glu Phe
 65 70 75 80
 Pro Lys Leu Glu Thr Leu Asn Tyr Gln Gly Ser Phe Gly His Leu Arg
 85 90 95
 Ala Lys Cys Arg Gly Val Tyr Pro Val Leu Tyr Ala Leu Asn Phe Ser
 100 105 110
 Cys Ser Ser Cys Lys Met Asp Met Asp Phe Arg Gly Lys Trp Asn Arg
 115 120 125
 Ser Ser Thr Ile Thr Ile Ser Asn Gln Lys Glu Ser Ile Asn Leu Lys
 130 135 140
 Leu Pro Lys Asp Val Gly Val Ile Val Asn Thr Lys Thr Ser Leu Lys
 145 150 155 160
 Gly Asn Val Cys Pro Gly Ser Thr Phe Ile Lys Gln Gly Trp Gly Val
 165 170 175
 Trp Asn Lys Ile Tyr His Asn Asp Leu Val Gly Phe Ser Glu Val Thr
 180 185 190
 Leu Ile Phe Asn Val Ser Ser Glu Gly Gly Thr Ile Thr Phe Ser
 195 200 205

<210>634

<211>219

<212>PRT

<213>Chlamydia pneumoniae

<400>634

Ser Leu Ile Met Arg Cys Thr Ala Tyr Cys Thr Ala Ser Ala Tyr Asn
 1 5 10 15
 Leu His Val Leu Phe His Leu Leu Lys Pro Arg Tyr Pro Thr Ile Leu
 20 25 30
 Ser Arg Glu Tyr Val Leu Ala Asn Leu Asp Ser Thr Gln Ala Ser Asn
 35 40 45
 Gln Leu Ala Ile Phe Phe Pro Phe Gly Val Ala Val Phe Trp Gly Trp
 50 55 60
 Glu Glu Ser Glu Glu Ile Lys Leu Leu Gln Thr Ile Val Thr Ala Ser
 65 70 75 80
 Pro Glu Ile Leu Pro Gln Pro Glu Ile Asp Cys Tyr Asn Phe His Tyr
 85 90 95
 Gly Asp Lys Leu Gln Ile Arg Arg Asp Arg Leu Thr Leu Ala Asp Thr
 100 105 110
 Thr Leu Asn Thr Lys Leu Ala Ile Ala Phe Gly Leu Ala Gln Ser Val
 115 120 125
 Lys Leu Thr Thr Phe Glu Thr Thr Ile Tyr Lys Thr Ile Glu Asp Ser
 130 135 140
 Lys Arg Leu Pro Gln Asp Leu Ala Thr Lys Gly Lys Ile Ser Met Ser
 145 150 155 160

Arg Lys Ala Ile Ala Lys Lys Ile Gly Lys Leu Phe Leu Asp Lys Ala
 165 170 175
 Ser Val Asn Leu His Ser Asp Ile Leu Asp Glu Pro Asp Phe Phe Trp
 180 185 190
 Asp His Pro Glu Thr Gln Ala Ile Tyr Arg Asp Val Leu Ser Cys Leu
 195 200 205
 Asp Ile Glu Ala Arg Ile Asn Val Leu Ile Val
 210 215
 <210>635
 <211>368
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>635
 Val Leu Gly Ala Lys Cys Met Ala Phe Lys Arg Lys Thr Arg Trp Leu
 1 5 10 15
 Trp Gln Val Leu Ile Leu Ser Val Gly Leu Asn Met Leu Phe Leu Leu
 20 25 30
 Leu Phe Tyr Ser Ala Ile Phe Arg Lys Asp Ile Tyr Lys Leu His Leu
 35 40 45
 Phe Ser Gly Pro Leu Ile Ala Lys Ser Ser Arg Lys Val Tyr Leu Ser
 50 55 60
 Glu Asp Phe Leu Asn Glu Ile Ser Gln Ala Ser Leu Asp Asp Leu Ile
 65 70 75 80
 Ser Leu Phe Lys Asp Glu Arg Tyr Met Tyr Gly Arg Pro Ile Lys Leu
 85 90 95
 Trp Ala Leu Ser Val Ala Ile Ala Ser His His Ile Asp Ile Thr Pro
 100 105 110
 Val Leu Ser Lys Pro Leu Thr Tyr Thr Glu Leu Lys Gly Ser Ser Val
 115 120 125
 Arg Trp Leu Leu Pro Asn Ile Asp Leu Lys Asp Phe Pro Val Ile Leu
 130 135 140
 Asp Tyr Leu Arg Cys His Lys Tyr Pro Tyr Thr Ser Lys Gly Leu Phe
 145 150 155 160
 Leu Leu Ile Glu Lys Met Val Gln Glu Gly Trp Val Asp Glu Asp Cys
 165 170 175
 Leu Tyr His Phe Cys Ser Thr Pro Glu Phe Leu Tyr Leu Arg Thr Leu
 180 185 190
 Leu Val Gly Ala Asp Val Gln Ala Ser Ser Val Ala Ser Leu Ala Arg
 195 200 205
 Met Val Ile Arg Cys Gly Ser Glu Arg Phe Phe His Phe Cys Asn Glu
 210 215 220
 Glu Ser Arg Thr Ser Met Ile Ser Ala Thr Gln Arg Gln Lys Val Leu
 225 230 235 240
 Lys Ser Tyr Leu Asp Cys Glu Glu Ser Leu Ala Ala Leu Leu Leu Leu
 245 250 255
 Val His Asp Ser Asp Val Val Leu His Glu Phe Cys Asp Glu Asp Leu
 260 265 270
 Glu Lys Val Ile Arg Leu Met Pro Gln Glu Ser Pro Tyr Ser Gln Asn
 275 280 285
 Phe Phe Ser Arg Leu Gln His Ser Pro Arg Arg Glu Leu Ala Cys Met
 290 295 300
 Ser Thr Arg Arg Val Glu Ala Pro Arg Val Gln Glu Asp Gln Asp Glu
 305 310 315 320
 Glu Tyr Val Val Gln Asp Gly Asp Ser Leu Trp Leu Ile Ala Lys Arg
 325 330 335
 Phe Gly Ile Pro Met Asp Lys Ile Ile Gln Lys Asn Gly Leu Asn His
 340 345 350
 His Arg Leu Phe Pro Gly Lys Val Leu Lys Leu Pro Ala Lys Gln Ser
 355 360 365
 <210>636
 <211>797
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>636

Leu Arg Leu Ser Ser Met Arg Ile Pro Ile Thr Leu Leu Gln Xaa Tyr
 1 5 10 15
 Phe Ser Glu Pro Leu Ser Thr Lys Glu Ile Leu Glu Ala Cys Asp His
 20 25 30
 Ile Gly Ile Glu Xaa Glu Ile Glu Asn Thr Thr Leu Tyr Ser Phe Ala
 35 40 45
 Ser Val Ile Thr Ala Lys Ile Leu His Thr Ile Pro His Pro Asn Ala
 50 55 60
 Asp Lys Leu Arg Val Ala Thr Leu Thr Asp Gly Glu Lys Glu His Gln
 65 70 75 80
 Val Val Cys Gly Ala Pro Asn Cys Glu Ala Gly Leu Ile Val Ala Leu
 85 90 95
 Ala Leu Pro Gly Ala Lys Leu Phe Asp Ser Glu Gly Gln Ala Tyr Thr
 100 105 110
 Ile Lys Lys Ser Lys Leu Arg Gly Val Glu Ser Gln Gly Met Cys Cys
 115 120 125
 Gly Ala Asp Glu Leu Gly Leu Asp Glu Leu Gln Ile Gln Glu Arg Ala
 130 135 140
 Leu Leu Glu Leu Pro Glu Ala Thr Pro Leu Gly Glu Asp Leu Ala Thr
 145 150 155 160
 Val Leu Gly Asn Thr Ser Leu Glu Ile Ser Leu Thr Pro Asn Leu Gly
 165 170 175
 His Cys Ala Ser Phe Leu Gly Leu Ala Arg Glu Ile Cys His Val Thr
 180 185 190
 Gln Ala Asn Leu Val Ile Pro Lys Glu Phe Ser Phe Glu Asn Leu Pro
 195 200 205
 Thr Thr Ala Leu Asp Met Gly Asn Asp Pro Asp Ile Cys Pro Phe Phe
 210 215 220
 Ser Tyr Val Val Ile Thr Gly Ile Ser Ala Gln Pro Ser Pro Ile Lys
 225 230 235 240
 Leu Gln Glu Ser Leu Gln Ala Leu Lys Gln Lys Pro Ile Asn Ala Ile
 245 250 255
 Val Asp Ile Thr Asn Tyr Ile Met Leu Ser Leu Gly Gln Pro Leu His
 260 265 270
 Ala Tyr Asp Ala Ser His Val Ala Leu Asp Ser Leu Arg Val Glu Lys
 275 280 285
 Leu Ser Thr Pro Glu Ser Leu Thr Leu Leu Asn Gly Glu Thr Val Leu
 290 295 300
 Leu Pro Ser Gly Val Pro Val Val Arg Asp Asp His Ser Leu Leu Gly
 305 310 315 320
 Leu Gly Gly Val Met Gly Ala Lys Ala Pro Ser Phe Gln Glu Thr Thr
 325 330 335
 Thr Thr Thr Val Ile Lys Ala Ala Tyr Phe Leu Pro Glu Ala Leu Arg
 340 345 350
 Ala Ser Gln Lys Leu Leu Pro Ile Pro Ser Glu Ser Ala Tyr Arg Phe
 355 360 365
 Thr Arg Gly Ile Asp Pro Gln Asn Val Val Pro Ala Leu Gln Ala Ala
 370 375 380
 Ile His Tyr Ile Leu Glu Ile Phe Pro Glu Ala Thr Ile Ser Pro Ile
 385 390 395 400
 Tyr Ser Ser Gly Glu Ile Cys Arg Glu Leu Lys Glu Val Ala Leu Arg
 405 410 415
 Pro Lys Thr Leu Gln Arg Ile Leu Gly Lys Ser Phe Ser Ile Glu Ile
 420 425 430
 Leu Ser Gln Lys Leu Gln Ser Leu Gly Phe Ser Thr Thr Pro Gln Glu
 435 440 445
 Thr Ser Leu Leu Val Lys Val Pro Ser Tyr Arg His Asp Ile Asn Glu
 450 455 460
 Glu Ile Asp Leu Val Glu Glu Ile Cys Arg Thr Glu Ser Trp Asn Ile
 465 470 475 480
 Glu Thr Gln Asn Pro Val Ser Cys Tyr Thr Pro Ile Tyr Lys Leu Lys
 485 490 495
 Arg Glu Thr Ala Gly Phe Leu Ala Asn Ala Gly Leu Gln Glu Phe Phe
 500 505 510

Thr Pro Asp Leu Leu Asp Pro Glu Thr Val Ala Leu Thr Arg Lys Glu
 515 520 525
 Lys Glu Glu Ile Ser Leu Gln Gly Ser Lys His Thr Thr Val Leu Arg
 530 535 540
 Ser Ser Leu Leu Pro Gly Leu Leu Lys Ser Ala Ala Thr Asn Leu Asn
 545 550 555 560
 Arg Gln Ala Pro Ser Val Gln Ala Phe Glu Ile Gly Thr Val Tyr Ala
 565 570 575
 Lys His Gly Glu Gln Cys Gln Glu Thr Gln Thr Leu Ala Ile Leu Leu
 580 585 590
 Thr Glu Asp Gly Glu Ser Arg Ser Trp Leu Pro Lys Pro Ser Leu Ser
 595 600 605
 Phe Tyr Ser Leu Lys Gly Trp Val Glu Arg Leu Leu Tyr His His His
 610 615 620
 Leu Ser Ile Asp Ala Leu Thr Leu Glu Ser Ser Ala Leu Cys Glu Phe
 625 630 635 640
 His Pro Tyr Gln Gln Gly Val Leu Arg Ile His Lys Gln Ser Phe Ala
 645 650 655
 Thr Leu Gly Gln Val His Pro Glu Leu Ala Lys Lys Ala Gln Ile Lys
 660 665 670
 His Pro Val Phe Phe Ala Glu Leu Asn Leu Asp Leu Leu Cys Lys Met
 675 680 685
 Leu Lys Lys Thr Thr Lys Leu Tyr Lys Pro Tyr Ala Ile Tyr Pro Ser
 690 695 700
 Ser Phe Arg Asp Leu Thr Leu Thr Val Pro Glu Asp Ile Pro Ala Asn
 705 710 715 720
 Leu Leu Arg Gln Lys Leu Leu His Glu Gly Ser Lys Trp Leu Glu Ser
 725 730 735
 Val Thr Ile Ile Ser Ile Tyr Gln Asp Lys Ser Leu Glu Thr Arg Asn
 740 745 750
 Lys Asn Val Ser Leu Arg Leu Val Phe Gln Asp Tyr Glu Arg Thr Leu
 755 760 765
 Ser Asn Gln Asp Ile Glu Glu Glu Tyr Cys Arg Leu Val Ala Leu Leu
 770 775 780
 Asn Glu Leu Leu Thr Asp Thr Lys Gly Thr Ile Asn Ser
 785 790 795
 <210>637
 <211>328
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>637
 Arg Asp Tyr Gln Phe Met Lys Gln Leu Leu Phe Cys Val Cys Val Phe
 1 5 10 15
 Ala Met Ser Cys Ser Ala Tyr Ala Ser Pro Arg Arg Gln Asp Pro Ser
 20 25 30
 Val Met Lys Glu Thr Phe Arg Asn Asn Tyr Gly Ile Ile Val Ser Gly
 35 40 45
 Gln Glu Trp Val Lys Arg Gly Ser Asp Gly Thr Ile Thr Lys Val Leu
 50 55 60
 Lys Asn Gly Ala Thr Leu His Glu Val Tyr Ser Gly Gly Leu Leu His
 65 70 75 80
 Gly Glu Ile Thr Leu Thr Phe Pro His Thr Thr Ala Leu Asp Val Val
 85 90 95
 Gln Ile Tyr Asp Gln Gly Arg Leu Val Ser Arg Lys Thr Phe Phe Val
 100 105 110
 Asn Gly Leu Pro Ser Gln Glu Glu Leu Phe Asn Glu Asp Gly Thr Phe
 115 120 125
 Val Leu Thr Arg Trp Pro Asp Asn Asn Asp Ser Asp Thr Ile Thr Lys
 130 135 140
 Pro Tyr Phe Ile Glu Thr Thr Tyr Gln Gly His Val Ile Glu Gly Ser
 145 150 155 160
 Tyr Thr Ser Phe Asn Gly Lys Tyr Ser Ser Ile His Asn Gly Glu
 165 170 175
 Gly Val Arg Ser Val Phe Ser Ser Asn Asn Ile Leu Leu Ser Glu Glu

180 185 190
 Thr Phe Asn Glu Gly Val Met Val Lys Tyr Thr Thr Phe Tyr Pro Asn
 195 200 205
 Arg Asp Pro Glu Ser Ile Thr His Tyr Gln Asn Gly Gln Pro His Gly
 210 215 220
 Leu Arg Leu Thr Tyr Leu Gln Gly Gly Ile Pro Asn Thr Ile Glu Glu
 225 230 235 240
 Trp Arg Tyr Gly Phe Gln Asp Gly Thr Thr Ile Val Phe Lys Asn Gly
 245 250 255
 Cys Lys Thr Ser Glu Ile Ala Tyr Val Lys Gly Val Lys Glu Gly Leu
 260 265 270
 Glu Leu Arg Tyr Asn Glu Gln Glu Ile Val Ala Glu Glu Val Ser Trp
 275 280 285
 Arg Asn Asp Phe Leu His Gly Glu Arg Lys Ile Tyr Ala Gly Gly Ile
 290 295 300
 Gln Lys His Glu Trp Tyr Tyr Arg Gly Arg Ser Val Ser Lys Ala Lys
 305 310 315 320
 Phe Glu Arg Leu Asn Ala Ala Gly
 325

<210>638

<211>460

<212>PRT

<213>Chlamydia pneumoniae

<400>638

Trp Glu Ser Ser Arg Ser Arg Val Thr Glu Asn Leu Lys Lys Met Arg
 1 5 10 15
 Ala Glu Lys Val Arg Glu Asn Ile Ser Lys Val Asn Ser Glu Met Val
 20 25 30
 Met Leu Leu Pro Lys Asp Thr Arg Thr Trp Glu Met Glu Arg Arg Tyr
 35 40 45
 Met Ser Thr Tyr Glu Gln Leu Gly Ile Leu Ile Lys Ala Lys Tyr Arg
 50 55 60
 Lys Lys Gln Glu Ala Ser Val Lys Lys Tyr Gln Val Ala Phe Glu Glu
 65 70 75 80
 Lys Arg Gln Ser Pro Met Pro Thr Leu Arg His Leu Glu Met Lys Asn
 85 90 95
 Glu Gly Ile Cys Leu Lys Arg Leu Gln Gln Arg Val Asp Lys Met Gln
 100 105 110
 Arg Pro Tyr Glu Met Ala Gln Gln Ala Trp Asn Arg Ala Thr Asp Asn
 115 120 125
 Tyr Arg Pro Phe Leu Met Ala Leu Thr Arg Ile Glu His Glu Leu Arg
 130 135 140
 Leu Ala Asp Tyr Asn Asn Trp Gly Gln Pro Glu Asp Leu Cys Ile Ala
 145 150 155 160
 Tyr Ala Asn Val Glu Lys Arg Ala Glu Pro Tyr Lys Lys Ser Leu Leu
 165 170 175
 Glu Ile Arg Gln Val Leu Glu Asp Tyr Ala Lys Leu Arg Ser Ala Ile
 180 185 190
 Ser Phe Ile Gln Asp Lys Arg Leu Trp Ile Glu Lys Glu Ser Glu Asp
 195 200 205
 Leu Arg Ile Leu Ile Asn Pro Phe Phe Ser Ser Phe His Trp Glu Asp
 210 215 220
 Asp Ala Gly Gly Ser Arg Glu Met Asn Lys Tyr Val Pro Trp Trp Gln
 225 230 235 240
 Leu Ser Arg Val Thr Arg Lys Asp Leu Leu Ala Ala Leu Val Phe Gly
 245 250 255
 Ile Arg Ile Ala Leu Val Val Ala Gly Ile Gly Ile Thr Ile Ala Leu
 260 265 270
 Ala Ile Gly Ile Met Ile Gly Leu Val Ser Gly Tyr Phe Gly Gly Thr
 275 280 285
 Val Asp Met Ile Leu Ser Arg Phe Thr Glu Ile Trp Glu Thr Met Pro
 290 295 300
 Val Leu Phe Ile Leu Met Leu Val Ile Ser Ile Thr Gln Gln Lys Ser
 305 310 315 320

Leu Leu Leu Asn Thr Val Leu Leu Gly Cys Phe Ser Trp Thr Gly Phe
 325 330 335
 Ser Arg Tyr Val Arg Ile Glu Val Leu Lys Gln Arg Asp Arg Gly Tyr
 340 345 350
 Val Leu Ala Ala Thr Asn Leu Gly Tyr Ser His Tyr Tyr Ile Met Val
 355 360 365
 His Gln Ile Leu Pro Asn Ala Ile Val Pro Val Ile Ser Leu Val Pro
 370 375 380
 Phe Ala Met Met Ala Met Ile Ser Cys Glu Ala Gly Leu Thr Phe Leu
 385 390 395 400
 Gly Leu Gly Glu Glu Ser Ser Ala Ser Trp Gly Asn Leu Met Arg Gly
 405 410 415
 Gly Val Thr Gly Phe Pro Ala Glu Ser Ala Val Leu Trp Pro Pro Ala
 420 425 430
 Ile Ile Leu Thr Met Leu Leu Ile Ala Ile Ala Leu Ile Gly Asp Gly
 435 440 445
 Val Arg Asp Ala Leu Asp Pro Arg Leu Gln Asp Ser
 450 455 460
 <210>639
 <211>510
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>639
 Val Leu Lys Tyr Ile Leu Lys Arg Leu Val Leu Ile Pro Leu Thr Leu
 1 5 10 15
 Phe Ala Ile Val Ser Ile Asn Phe Val Ile Leu Asn Ala Ala Pro Gly
 20 25 30
 Asp Val Leu Glu Glu Lys Ser Arg Asp Ala Leu Gly Glu Ala Gly Lys
 35 40 45
 Ser Asp Lys Met Arg Ser Tyr Lys Gly Pro Asp Arg Tyr Leu Gln Phe
 50 55 60
 Arg Glu His Tyr Gly Leu Thr Leu Pro Ile Phe Phe Asn Thr Arg Pro
 65 70 75 80
 Lys Ile Thr His Lys Lys Ile Gln Thr Ala Leu Gln Glu Leu Ala Asn
 85 90 95
 Ala Asn Asn Thr Thr Pro Ser Ala Lys Asn Ala Ala Lys Ser Leu Val
 100 105 110
 Tyr Trp Gly Asp Cys Ala Lys Phe Val Met Pro Ala Leu Leu Phe Glu
 115 120 125
 Ala Asp Asp Ala Ser Arg Asp Asp Lys Tyr Arg His Ile Ala Ala Asp
 130 135 140
 Leu Phe Ile Arg Gly Gly Val Leu Gln Gly Phe Val Gly Pro Asn Leu
 145 150 155 160
 Ser Pro Glu Gln Arg Ala Gln Asn Lys Glu Ile Ala Glu Ser Asn Ala
 165 170 175
 Phe Leu Val Arg Gln Leu Asn Glu Glu Asp Leu Asp Thr Lys Val Glu
 180 185 190
 Ala Leu Lys Gly Trp Phe Gln Asp His Gly Gly Thr Glu Val Phe Cys
 195 200 205
 Tyr Ser Ser Lys Gln Phe Trp Lys Thr Phe Phe Leu Glu Thr Arg Phe
 210 215 220
 Ala Arg Tyr Met Ser Arg Val Leu Arg Leu Asp Phe Gly Thr Leu Arg
 225 230 235 240
 Asn Asp Ala His Lys Thr Val Ile Ser Glu Val Ile Lys Arg Leu Arg
 245 250 255
 Cys Ser Leu Val Leu Ser Ile Leu Pro Met Ile Val Gly Phe Val Leu
 260 265 270
 Cys Gln Ile Phe Gly Met Ile Met Ala Leu Lys Arg Asn Arg Trp Ile
 275 280 285
 Asp His Ser Leu Asn Phe Ile Phe Leu Ile Leu Phe Ser Ile Pro Val
 290 295 300
 Phe Val Ala Val Pro Trp Ile Leu Asp Asn Phe Val Ile Asn Lys Thr
 305 310 315 320
 Ile Pro Phe Thr Thr Ile Pro Met Pro Tyr Ser Gly Leu Arg Ser Pro

325 330 335
 Pro Glu Val Phe Asn Glu Leu Ser Thr Leu Gly Arg Ile Phe Asp Leu
 340 345 350
 Val Ser His Gly Phe Leu Pro Phe Cys Ala Val Ser Tyr Gly Ala Leu
 355 360 365
 Ala Ala Gln Ser Arg Leu Ser Arg Ser Ile Phe Leu Glu Val Leu Ser
 370 375 380
 Gln Asp Phe Ile Cys Ala Ala Lys Ala Arg Gly Leu Arg Trp Phe Asp
 385 390 395 400
 Ile Leu Tyr Lys His Val Gly Lys Asn Ala Ala Val Ser Ile Val Thr
 405 410 415
 Ser Leu Ala Ser Ser Phe Arg Asn Val Thr Trp Arg Gly Val Gly Cys
 420 425 430
 Arg Asn Pro Ile Gln Tyr Arg Trp Leu Trp Glu Leu Leu Ser Gly
 435 440 445
 Asn Phe Lys Ser Arg Ser Gln Cys Ser Ser Ile Phe Cys Ala Cys Arg
 450 455 460
 Ile Gly Ser Ile Phe Ser Gly Ile Phe Ala Arg Arg Tyr Leu Leu Arg
 465 470 475 480
 Thr Leu Arg Ser Ser Ser Ser Ala Arg Gly Lys Glu Asp Ile Asn Ala
 485 490 495
 Glu Ala Ser Phe Leu Leu Ser Thr Phe Ser Ile Cys Leu Leu
 500 505 510
 <210>640
 <211>713
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>640
 Lys Arg Arg Glu Ser Gly His Met Tyr Lys Arg Cys Val Leu Asp Lys
 1 5 10 15
 Ile Leu Lys Gly Ile Val Ala Gly Ser Leu Ile Leu Leu Tyr Trp Ser
 20 25 30
 Ser Asp Leu Leu Glu Arg Asp Ile Lys Ser Ile Lys Gly Asn Val Arg
 35 40 45
 Asp Ile Gln Glu Asp Ile Arg Glu Ile Ser Arg Val Val Lys Gln Gln
 50 55 60
 Gln Thr Ser Gln Ala Ile Pro Ala Ala Pro Gly Val Met Leu Ala Pro
 65 70 75 80
 Lys Leu Val Arg Asp Glu Ala Phe Ala Leu Leu Phe Gly Asp Pro Ser
 85 90 95
 Tyr Pro Asn Leu Ser Leu Asp Pro Tyr Lys Gln Gln Thr Leu Pro
 100 105 110
 Glu Leu Leu Gly Thr Asn Phe His Pro His Gly Ile Leu Arg Thr Ala
 115 120 125
 His Val Gly Lys Pro Glu Xaa Leu Ser Leu Leu Met Ala Leu Ile Cys
 130 135 140
 Arg Gly Leu Leu Arg Ser Leu Tyr Ser Ser Leu Ala Ser Pro His Val
 145 150 155 160
 Gly Lys Tyr Glu Glu Phe Ser Pro Asp Leu Ala Val Lys Ile Glu Glu
 165 170 175
 His Leu Val Glu Asp Gly Ser Gly Asp Lys Glu Phe His Ile Tyr Leu
 180 185 190
 Arg Pro Asn Val Phe Trp Arg Pro Ile Asp Pro Lys Ala Leu Pro Lys
 195 200 205
 His Val Gln Leu Asp Glu Val Phe Gln Arg Pro His Pro Val Thr Ala
 210 215 220
 His Asp Ile Lys Phe Phe Tyr Asp Ala Val Met Asn Pro Tyr Val Ala
 225 230 235 240
 Thr Met Arg Ala Val Ala Leu Arg Ser Cys Tyr Glu Asp Val Val Ser
 245 250 255
 Val Ser Val Glu Asn Asp Leu Lys Leu Val Val Arg Trp Lys Ala His
 260 265 270
 Thr Val Ile Asn Glu Glu Gly Lys Glu Glu Arg Lys Val Leu Tyr Ser
 275 280 285

Ala Phe Ser Asn Thr Leu Ser Leu Gln Pro Leu Pro Arg Phe Val Tyr
 290 295 300
 Gln Tyr Phe Ala Asn Gly Glu Lys Ile Ile Glu Asp Glu Asn Ile Asp
 305 310 315 320
 Thr Tyr Arg Thr Asn Ser Ile Trp Ala Gln Asn Phe Thr Met His Trp
 325 330 335
 Ala Asn Asn Tyr Ile Val Ser Cys Gly Ala Tyr Tyr Phe Ala Gly Met
 340 345 350
 Asp Asp Glu Lys Ile Val Phe Ser Arg Asn Pro Asp Phe Tyr Asp Pro
 355 360 365
 Leu Ala Ala Leu Ile Asp Lys Arg Phe Val Tyr Phe Lys Glu Ser Thr
 370 375 380
 Asp Ser Leu Phe Gln Asp Phe Lys Thr Gly Lys Ile Asp Ile Ser Tyr
 385 390 395 400
 Leu Pro Pro Asn Gln Arg Asp Asn Phe Tyr Ser Phe Met Lys Ser Ser
 405 410 415
 Ala Tyr Asn Lys Gln Val Ala Lys Gly Gly Ala Val Arg Glu Thr Val
 420 425 430
 Ser Ala Asp Arg Ala Tyr Thr Tyr Ile Gly Trp Asn Cys Phe Ser Leu
 435 440 445
 Phe Phe Gln Ser Arg Gln Val Arg Cys Ala Met Asn Met Ala Ile Asp
 450 455 460
 Arg Glu Arg Ile Ile Glu Gln Cys Leu Asp Gly Gln Gly Tyr Thr Ile
 465 470 475 480
 Ser Gly Pro Phe Ala Ser Ser Ser Pro Ser Tyr Asn Lys Gln Ile Glu
 485 490 495
 Gly Trp His Tyr Ser Pro Glu Glu Ala Ala Arg Leu Leu Glu Glu Glu
 500 505 510
 Gly Trp Ile Asp Thr Asp Gly Asp Gly Ile Arg Glu Lys Val Ile Asp
 515 520 525
 Gly Val Ile Val Pro Phe Arg Phe Arg Leu Cys Tyr Tyr Val Lys Ser
 530 535 540
 Val Thr Ala His Thr Ile Ala Asp Tyr Val Ala Thr Ala Cys Lys Glu
 545 550 555 560
 Ile Gly Ile Glu Cys Ser Leu Leu Gly Leu Asp Met Ala Asp Leu Ser
 565 570 575
 Gln Ala Phe Asp Glu Lys Asn Phe Asp Ala Leu Leu Met Gly Trp Cys
 580 585 590
 Leu Gly Ile Pro Pro Glu Asp Pro Arg Ala Leu Trp His Ser Glu Gly
 595 600 605
 Ala Met Glu Lys Gly Ser Ala Asn Val Val Gly Phe His Asn Glu Glu
 610 615 620
 Ala Asp Lys Ile Ile Asp Arg Leu Ser Tyr Glu Tyr Asp Leu Lys Glu
 625 630 635 640
 Arg Asn Arg Leu Tyr His Arg Phe His Glu Ile Ile His Glu Glu Ala
 645 650 655
 Pro Tyr Ala Phe Leu Phe Ser Arg His Cys Ser Leu Leu Tyr Lys Asp
 660 665 670
 Tyr Val Lys Asn Ile Phe Val Pro Thr His Arg Thr Asp Leu Ile Pro
 675 680 685
 Glu Ala Gln Asp Glu Thr Val Asn Val Thr Met Val Trp Leu Glu Lys
 690 695 700
 Lys Glu Asp Pro Cys Leu Ser Thr Ser
 705 710
 <210>641
 <211>210
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>641
 Gln Phe Pro Arg Ile His Ala Asp Asp Ile Ile Asn Ser Met Asp Glu
 1 5 10 15
 Ile Thr Pro Asn Tyr Pro Leu Leu Arg Gln Asp Ser Leu Trp Asn Arg
 20 25 30
 Val Arg Val Ser Trp Arg Ala Asp Leu Ser Val Ser Ser Arg Tyr Glu

35 40 45
 Ile Ala Ser Ala Ile Ala Ile Leu Gly Leu Leu Val Ala Phe Cys Ala
 50 55 60
 Ser Ala Ala Val Ser Ile Ile Phe Thr Ala Asn Pro Ser Cys Ser Gly
 65 70 75 80
 Ile Tyr Arg Trp Leu Phe Gly Phe Arg Ala Phe Thr Tyr Pro Ile Gly
 85 90 95
 Tyr Arg Ser Thr Asn His Arg Asn Tyr Ser Phe Thr Leu Trp Tyr Leu
 100 105 110
 Leu Val Ser Ser Thr Thr Arg Val Ile Thr Leu Ser Ile Cys Phe Tyr
 115 120 125
 Thr Phe Tyr Leu Gln Ile Ile Phe Leu Phe Leu Tyr Ser Ala Trp Lys
 130 135 140
 Pro Leu Arg Gln Pro Leu Phe Cys His Arg Leu Ile Ile Trp Pro
 145 150 155 160
 Ile Ser Gly Leu Ser Cys Arg Ile Leu Asn Lys Glu Asn Lys Asn Glu
 165 170 175
 Lys Ile Asn Val Ser Pro Ser Phe Ser Ser Cys Ala Ser Cys Cys Arg
 180 185 190
 Phe Cys Phe Trp Ile Arg Ile Leu Phe Ser Thr Thr Arg Arg Ser Ser
 195 200 205
 Arg Phe
 210
 <210>642
 <211>338
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>642
 Asp Ser Gly Phe Met Lys Pro Leu Gly Phe Gln Glu Asn Leu Glu Ala
 1 5 10 15
 Leu Cys Asn Lys Thr Ser Arg Gln Leu Leu Lys Tyr Leu Ile Lys Gln
 20 25 30
 Ile Leu Phe Val Cys Gly Ala Ser Leu Leu Ile Ala Leu Glu Phe Ser
 35 40 45
 Phe Phe Leu Tyr Phe Phe Leu Phe Ser Gly Lys Thr Val Ile Pro Ala
 50 55 60
 Phe Cys Leu Ala Cys Phe Phe Leu Thr Leu Phe Val Cys Leu Val Thr
 65 70 75 80
 Arg Leu Tyr Leu Leu Ser Gly Lys Gly Asp Phe Phe Glu Asp Leu Ala
 85 90 95
 Ser Glu Tyr Leu Gln Gly Ala Val Pro Pro Asn Lys Arg Ser Gln Asn
 100 105 110
 Ile Val Glu Glu Gln Ser His Leu Ala Ala Ala Thr Lys Leu Ser
 115 120 125
 Ile Asn Leu Gln Asn Gln Glu Tyr Ser Leu Leu Ser Glu Ile Phe Lys
 130 135 140
 Phe Leu Pro Lys His Asp Leu Ile Arg Lys Phe Ser Cys Phe Cys Phe
 145 150 155 160
 Trp Lys Asp Tyr Phe Leu Phe Arg Glu Cys Leu Leu Gln Lys Ala Ile
 165 170 175
 Glu Ala Tyr Ile Lys Val Val Gln Ala Ile Pro Val Asp Leu Ser Ala
 180 185 190
 His Val Ser Leu Ala Asp Ala Tyr Val Ala Leu Ser Gly Leu Tyr Ala
 195 200 205
 Asp Pro Arg Lys Tyr Pro Glu Phe Asp Ala Asn Tyr Trp Ile Pro Ser
 210 215 220
 Gly Arg Tyr Ser Ala Glu Ile Gln Glu Lys Phe Phe Ala Thr Ala Arg
 225 230 235 240
 Arg Ala Ile Glu Glu Phe Gln Ile Leu Asn Glu Tyr Ala Pro Gly Asn
 245 250 255
 Ala Trp Val His Ala Gln Leu Ala Tyr Ser Tyr His Asp Leu Gln Met
 260 265 270
 Pro Met Glu Glu Ile Gln Glu Tyr Glu Ile Val Leu Lys Leu Lys Pro
 275 280 285

Asn Asp Val Glu Thr Met Ser Lys Leu Gly Ile Leu Tyr Phe Gln Gln
 290 295 300
 Gly Met Asn Ala Lys Gly Leu Arg Ile Tyr Glu Glu Ile Lys Lys Arg
 305 310 315 320
 Asp Tyr Lys Lys Ser Gln Lys Leu Ile Lys Phe Tyr Gly Val Glu Tyr
 325 330 335
 Lys Tyr

<210>643

<211>350

<212>PRT

<213>Chlamydia pneumoniae

<400>643

Trp Lys Ile Met Arg Leu Ile Val Leu Met Gln Cys Leu Val Ser Leu
 1 5 10 15
 Phe Leu Ala Lys Lys Val Thr Val Thr Thr Pro Ala Tyr Leu Leu Ala
 20 25 30
 Asn Phe Gly Gly Pro Arg His Ala Lys Asp Leu Gln Glu Phe Leu Ile
 35 40 45
 Ser Leu Leu Thr Asp Arg Asp Val Thr Gly Thr Phe Leu Pro Arg Val
 50 55 60
 Leu His Arg His Leu Phe Thr Phe Ile Ala Lys Lys Arg Val Pro Lys
 65 70 75 80
 Val Leu Pro Gln Tyr Gln Ser Leu Gln Asn Trp Ser Pro Ile Tyr Phe
 85 90 95
 Asp Thr Glu Thr Leu Ala Lys Thr Leu Ser Glu Ile Leu Arg Ala Pro
 100 105 110
 Val Ile Pro Phe His Arg Tyr Leu Pro Ser Thr His Glu Lys Thr Leu
 115 120 125
 Leu Ala Leu Arg Thr Leu His Thr Arg His Val Ile Gly Ile Pro Leu
 130 135 140
 Phe Pro His Phe Thr Tyr Ser Val Thr Gly Ser Ile Val Arg Phe Phe
 145 150 155 160
 Met Lys His Val Pro Glu Ile Pro Ile Ser Trp Ile Pro Gln Phe Gly
 165 170 175
 Ser Asp Ser Lys Phe Val Ser Leu Ile Thr Cys His Ile Arg Asp Phe
 180 185 190
 Leu Gln Lys Leu Gly Ile Leu Glu Lys Glu Cys Cys Phe Leu Phe Ser
 195 200 205
 Val His Gly Leu Pro Val Arg Tyr Ile Ser Gln Gly Asp Pro Tyr Ser
 210 215 220
 Lys Gln Cys Tyr Glu Ser Phe Ser Ala Ile Thr Thr Asn Phe Lys Gln
 225 230 235 240
 Ser Glu Asn Phe Leu Cys Phe Gln Ser Lys Phe Gly Pro Gly Lys Trp
 245 250 255
 Leu Ser Pro Ser Thr Ala Gln Leu Cys Gln Asn Ile Asp Thr Asp Lys
 260 265 270
 Pro Asn Val Ile Val Val Pro Phe Gly Phe Ile Ser Asp His Leu Glu
 275 280 285
 Thr Leu Tyr Glu Ile Glu Arg Asp Tyr Leu Pro Leu Leu Arg Ser Arg
 290 295 300
 Gly Tyr Arg Ala Leu Arg Ile Pro Ala Ile Tyr Ser Ser Pro Leu Trp
 305 310 315 320
 Val Ser Thr Leu Val Asp Ile Val Lys Glu Asn Ser Thr Val Val Ala
 325 330 335
 Glu Glu Leu Ile Lys Ser Gly Lys Lys His Thr Gly Ile Arg
 340 345 350

<210>644

<211>257

<212>PRT

<213>Chlamydia pneumoniae

<400>644

Asn Ser Glu Ala Gln Leu Asn Val Lys Ile Lys Phe Ser Trp Lys Val
 1 5 10 15

Asn Phe Leu Ile Cys Leu Leu Ala Val Gly Leu Ile Phe Phe Gly Cys
 20 25 30
 Ser Arg Val Lys Arg Glu Val Leu Val Gly Arg Asp Ala Thr Trp Phe
 35 40 45
 Pro Lys Gln Phe Gly Ile Tyr Thr Ser Asp Thr Asn Ala Phe Leu Asn
 50 55 60
 Asp Leu Val Ser Glu Ile Asn Tyr Lys Glu Asn Leu Asn Ile Asn Ile
 65 70 75 80
 Val Asn Gln Asp Trp Val His Leu Phe Glu Asn Leu Asp Asp Lys Lys
 85 90 95
 Thr Gln Gly Ala Phe Thr Ser Val Leu Pro Thr Leu Glu Met Leu Glu
 100 105 110
 His Tyr Gln Phe Ser Asp Pro Ile Leu Leu Thr Gly Pro Val Leu Val
 115 120 125
 Val Ala Gln Asp Ser Pro Tyr Gln Ser Ile Glu Asp Leu Lys Gly Arg
 130 135 140
 Leu Ile Gly Val Tyr Lys Phe Asp Ser Ser Val Leu Val Ala Gln Asn
 145 150 155 160
 Ile Pro Asp Ala Val Ile Ser Leu Tyr Gln His Val Pro Ile Ala Leu
 165 170 175
 Glu Ala Leu Thr Ser Asn Cys Tyr Asp Ala Leu Leu Ala Pro Val Ile
 180 185 190
 Glu Val Thr Ala Leu Ile Glu Thr Ala Tyr Lys Gly Arg Leu Lys Ile
 195 200 205
 Ile Ser Lys Pro Leu Asn Ala Asp Gly Leu Arg Leu Ala Ile Leu Lys
 210 215 220
 Gly Thr Asn Gly Asp Leu Leu Glu Gly Phe Asn Ala Gly Leu Val Lys
 225 230 235 240
 Thr Arg Arg Ser Gly Lys Tyr Asp Ala Ile Lys Gln Arg Tyr Arg Leu
 245 250 255
 Pro

<210>645

<211>196

<212>PRT

<213>Chlamydia pneumoniae

<400>645

Leu Arg Lys Leu Cys Ser Ser Arg Gly Asp Val Arg Ile Leu Ala Gly
 1 5 10 15
 Lys Tyr Lys Gly Lys Ser Leu Lys Thr Phe Ser Asn Pro His Ile Arg
 20 25 30
 Pro Thr Ser Gly Leu Val Lys Glu Ala Phe Phe Ser Ile Cys Arg Glu
 35 40 45
 Asp Ile Glu Gly Ala Ala Phe Leu Asp Leu Phe Ala Gly Met Gly Ala
 50 55 60
 Ile Gly Phe Glu Ala Leu Ser Arg Gly Ala Ala Ser Val Val Phe Val
 65 70 75 80
 Asp Ile Ser Ile Lys Ala Ile Gln Leu Ile His Thr Asn Ser Ala Leu
 85 90 95
 Leu Gly Glu Gln Leu Pro Val Val Ile Phe Arg Gln Asp Ala Gln Ser
 100 105 110
 Ala Ile Gln Arg Leu Ile Lys Gln Lys Arg Ser Phe Asp Leu Ile Tyr
 115 120 125
 Ile Asp Pro Pro Tyr Glu Leu Cys Asn Cys Tyr Val Glu Thr Leu Leu
 130 135 140
 Gln Lys Ile Val Ser Gly Asn Ile Leu Asn Pro Glu Gly Thr Leu Phe
 145 150 155 160
 Leu Glu Asn Ala Ser Asp Glu Glu Ile Ala Cys Glu Gly Leu Thr Leu
 165 170 175
 Arg Arg Arg Arg Lys Leu Gly Lys Thr Tyr Leu Ala Glu Tyr Ile Val
 180 185 190
 Glu Lys Asp Pro
 195

<210>646

<211>262

<212>PRT

<213>Chlamydia pneumoniae

<400>646

Ser Ser Tyr Ser Arg Arg Gln Leu Arg Phe Tyr Thr Gly Ser Leu Gln
 1 5 10 15
 Met His Ile Tyr Gly Leu Ala Asp Leu His Leu Ala Leu Gly Val Pro
 20 25 30
 Glu Lys Thr Met Glu Val Phe Gly Asp Pro Trp Ile Gly Tyr His Gln
 35 40 45
 Lys Ile Cys Ser Glu Trp Gln Ala Val Val His Pro Glu Asp Ile Val
 50 55 60
 Leu Leu Pro Gly Asp Ile Ser Trp Ala Met Asn Leu Ser Glu Ala His
 65 70 75 80
 Lys Asp Phe Ala Phe Ile Gly Asp Leu Pro Gly Thr Lys Tyr Met Ile
 85 90 95
 Arg Gly Asn His Asp Tyr Trp Ser Ser Ala Ser Thr Ser Lys Ile Leu
 100 105 110
 Gln Ala Leu Pro Pro Ser Leu Tyr Tyr Leu Asn Gln Gly Phe Ala Leu
 115 120 125
 Leu Thr Pro His Leu Ala Val Val Gly Val Arg Leu Trp Asp Ser Pro
 130 135 140
 Thr Ile Cys Val Lys Lys Glu Asn Phe Leu Thr Pro Ser Thr Gln Glu
 145 150 155 160
 Gln Ser Tyr Thr Glu Gln Asp Glu Lys Ile Phe Leu Arg Glu Leu Gly
 165 170 175
 Arg Leu Lys Arg Ala Phe Ala Ala Leu Pro Lys Glu Val Thr Glu Val
 180 185 190
 Ile Val Met Thr His Tyr Pro Pro Ile Ser Ser Asp Gly Thr Pro Gly
 195 200 205
 Pro Ile Ser Glu Phe Leu Glu Ala Asp Gly Arg Val Ser Leu Cys Leu
 210 215 220
 Phe Gly His Ile His Lys Val Gln Arg Pro Ile Asp Gly Phe Gly Asn
 225 230 235 240
 Ile Arg Gly Ile His Tyr Ile Leu Val Ala Ala Asp Tyr Val Asn Phe
 245 250 255
 Val Pro Gln Glu Val Met
 260

<210>647

<211>330

<212>PRT

<213>Chlamydia pneumoniae

<400>647

Pro Asn Leu Val Ser Gly Tyr Ala Asp Ala Ile Arg Lys Asn Leu Leu
 1 5 10 15
 Tyr Phe Glu Asp Thr Glu Ile Glu Tyr Phe Leu Ile Leu Ser Gly Asp
 20 25 30
 Gln Leu Tyr Asn Met Asp Phe Arg Ser Ile Val Asp Thr Ala Ile Arg
 35 40 45
 Thr His Val Asp Met Val Leu Val Ala Gln Pro Ile Pro Glu Lys Asp
 50 55 60
 Ala Tyr Arg Met Gly Val Leu Asp Ile Asp Ser Glu Gly Lys Leu Ile
 65 70 75 80
 Asp Phe Tyr Glu Lys Pro Gln Glu Lys Glu Val Leu Lys Arg Phe Gln
 85 90 95
 Leu Ser Ser Glu Asp Arg Arg Ile His Lys Leu Thr Glu Asp Ser Gly
 100 105 110
 Asp Phe Leu Gly Ser Met Gly Ile Tyr Leu Phe Arg Arg Asp Ser Leu
 115 120 125
 Phe Ser Leu Leu Arg Glu Glu Gly Asn Asp Phe Gly Lys His Leu
 130 135 140
 Ile Gln Ala Gln Met Lys Arg Gly Gln Val Gln Thr Leu Leu Tyr Asn
 145 150 155 160
 Gly Tyr Trp Ala Asp Ile Gly Thr Ile Glu Ser Tyr Tyr Glu Ala Asn

165 170 175
 Ile Ala Leu Thr Gln Lys Pro His Ala Glu Lys Arg Gly Leu Asn Cys
 180 185 190
 Tyr Asp Asp Asn Gly Met Ile Tyr Ser Lys Asn His His Leu Pro Gly
 195 200 205
 Ala Ile Ile Thr Asp Ser Met Ile Ser Ser Ser Leu Leu Cys Glu Gly
 210 215 220
 Cys Val Ile Asn Thr Ser His Val Ser Arg Ser Val Leu Gly Ile Arg
 225 230 235 240
 Ser Lys Ile Gly Glu Asn Ser Val Val Asp Gln Ser Ile Ile Met Gly
 245 250 255
 Asn Ala Arg Tyr Gly Ser Pro Ser Met Pro Ser Leu Gly Ile Gly Lys
 260 265 270
 Asp Cys Glu Ile Arg Lys Ala Ile Ile Asp Glu Asn Cys Cys Ile Gly
 275 280 285
 Asn Gly Val Lys Leu Gln Asn Leu Lys Gly Tyr Ile Lys Tyr Asp Ser
 290 295 300
 Pro Asp Lys Lys Leu Phe Val Arg Asp Asn Ile Ile Ile Val Pro Gln
 305 310 315 320
 Gly Thr His Ile Pro Asp Asn Tyr Ile Phe
 325 330

<210>648

<211>225

<212>PRT

<213>Chlamydia pneumoniae

<400>648

Val Ser Phe Leu Tyr Phe Val Lys Asn Gly Arg Arg Leu Trp Arg Met
 1 5 10 15
 Met Asn Tyr Glu Asp Ala Lys Leu Arg Gly Gln Ala Val Ala Ile Leu
 20 25 30
 Tyr Gln Ile Gly Ala Ile Lys Phe Gly Lys His Ile Leu Ala Ser Gly
 35 40 45
 Glu Glu Thr Pro Leu Tyr Val Asp Met Arg Leu Val Ile Ser Ser Pro
 50 55 60
 Glu Val Leu Gln Thr Val Ala Thr Leu Ile Trp Arg Leu Arg Pro Ser
 65 70 75 80
 Phe Asn Ser Ser Leu Leu Cys Gly Val Pro Tyr Thr Ala Leu Thr Leu
 85 90 95
 Ala Thr Ser Ile Ser Leu Lys Tyr Asn Ile Pro Met Val Leu Arg Arg
 100 105 110
 Lys Glu Leu Gln Asn Val Asp Pro Ser Asp Ala Ile Lys Val Glu Gly
 115 120 125
 Leu Phe Thr Pro Gly Gln Thr Cys Leu Val Ile Asn Asp Met Val Ser
 130 135 140
 Ser Gly Lys Ser Ile Ile Glu Thr Ala Val Ala Leu Glu Glu Asn Gly
 145 150 155 160
 Leu Val Val Arg Glu Ala Leu Val Phe Leu Asp Arg Arg Lys Glu Ala
 165 170 175
 Cys Gln Pro Leu Gly Pro Gln Gly Ile Lys Val Ser Ser Val Phe Thr
 180 185 190
 Val Pro Thr Leu Ile Lys Ala Leu Ile Ala Tyr Gly Lys Leu Ser Ser
 195 200 205
 Gly Asp Leu Thr Leu Ala Asn Lys Ile Ser Glu Ile Leu Glu Ile Glu
 210 215 220

Ser

225

<210>649

<211>464

<212>PRT

<213>Chlamydia pneumoniae

<400>649

Met Lys Glu Glu Arg Ser Ser Glu Ile Leu Pro Arg Val Lys Glu Thr
 1 5 10 15
 Lys Lys His Ala Tyr Val Ser Met Gln Glu Lys Ser Cys Val Gly Glu

20 25 30
 Cys Ala Val Val Ala Ser Glu Ser Glu Glu Ala Glu Ser Val Thr Val
 35 40 45
 Thr Lys Ile Ala Lys Leu Gln Arg Met Gly Ile Glu Glu Leu Asn Ile
 50 55 60
 Leu Ala Arg Gln Tyr Gly Val Lys Asn Ile Gly Ser Leu Thr Lys Ser
 65 70 75 80
 Gln Val Val Phe Glu Ile Val Lys Ala Lys Ser Glu Arg Pro Asp Glu
 85 90 95
 Leu Leu Ile Gly Glu Gly Val Leu Glu Val Leu Pro Asp Gly Phe Gly
 100 105 110
 Phe Leu Arg Ser Pro Thr Tyr Asn Tyr Leu Pro Ser Ala Glu Asp Ile
 115 120 125
 Tyr Val Ser Pro Ala Gln Ile Arg Arg Phe Asp Leu Lys Lys Gly Asp
 130 135 140
 Thr Ile Ile Gly Thr Ile Arg Ser Pro Lys Glu Lys Glu Lys Tyr Phe
 145 150 155 160
 Ala Leu Leu Lys Val Asp Lys Ile Asn Gly Ser Thr Pro Asp Lys Ala
 165 170 175
 Lys Glu Arg Val Leu Phe Glu Asn Leu Thr Pro Leu Tyr Pro Asn Gln
 180 185 190
 Arg Ile Val Met Glu Met Gly Lys Asp His Leu Ala Glu Arg Val Leu
 195 200 205
 Asp Leu Thr Ala Pro Ile Gly Lys Gly Gln Arg Gly Leu Ile Val Ala
 210 215 220
 Pro Pro Arg Ser Gly Lys Thr Val Ile Leu Gln Ser Ile Ala His Ala
 225 230 235 240
 Ile Ala Val Asn Asn Pro Asp Ile Val Leu Ile Val Leu Leu Ile Asp
 245 250 255
 Glu Arg Pro Glu Glu Val Thr Asp Met Ile Arg Gln Val Arg Gly Glu
 260 265 270
 Val Val Ala Ser Thr Phe Asp Glu Gln Pro Glu Arg His Ile Gln Val
 275 280 285
 Ala Glu Met Val Ile Glu Lys Ala Arg Arg Leu Val Glu His Gly Asn
 290 295 300
 Asp Val Val Ile Leu Leu Asp Ser Ile Thr Arg Leu Ala Arg Ala Tyr
 305 310 315 320
 Asn Thr Val Gln Pro His Ser Gly Lys Ile Leu Thr Gly Gly Val Asp
 325 330 335
 Ala Ser Ala Leu His Lys Pro Lys Arg Phe Phe Gly Ala Ala Arg Asn
 340 345 350
 Ile Glu Gly Gly Gly Ser Leu Thr Ile Leu Ala Thr Ala Leu Ile Asp
 355 360 365
 Thr Gly Ser Arg Met Asp Glu Val Ile Phe Glu Glu Phe Lys Gly Thr
 370 375 380
 Gly Asn Met Glu Leu Val Leu Asp Arg Arg Leu Ser Asp Arg Arg Thr
 385 390 395 400
 Tyr Pro Ala Ile Asp Leu Ile Lys Ser Gly Thr Arg Lys Glu Glu Leu
 405 410 415
 Leu Tyr His Pro Ser Glu Leu Glu Arg Val Tyr Leu Phe Arg Gln Ala
 420 425 430
 Ile Ala Asp Leu Thr Thr Ile Asp Ala Met His Leu Leu Leu Gly Arg
 435 440 445
 Leu Lys Lys Thr Asn Ser Asn Ala Glu Phe Leu Leu Ser Leu Lys Glu
 450 455 460
 <210>650
 <211>238
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>650
 Arg Arg Asn Arg Arg Asp Ala Lys Thr Ser Glu Arg Glu Asp Gly Ile
 1 5 10 15
 Ser Tyr Asp Phe Ile Arg Ser Tyr Ser Cys Glu Tyr Leu Asn Trp Lys
 20 25 30

Lys Leu Gly Arg Met Leu Lys Leu Leu Lys Val Ser Ile Thr Gly Asp
 35 40 45
 Leu Ser Ser Gly Lys Thr Glu Ala Cys Gln Val Phe Gln Glu Leu Gly
 50 55 60
 Ala Tyr Val Val Ser Ala Asp Glu Ile Ser His Ser Phe Leu Ile Pro
 65 70 75 80
 His Thr Arg Ile Gly Arg Arg Val Ile Asp Leu Leu Gly Ser Asp Val
 85 90 95
 Val Val Asp Gly Ala Phe Asp Ala Gln Ala Ile Ala Ala Lys Val Phe
 100 105 110
 Tyr Asn Ser Val Leu Leu Gln Gly Leu Glu Ala Ile Leu His Pro Glu
 115 120 125
 Val Cys Arg Ile Ile Glu Glu Gln Tyr His Gln Ser Ile Gln Asp Gly
 130 135 140
 Asn Tyr Pro Phe Phe Val Ala Glu Val Pro Leu Leu Tyr Glu Ile His
 145 150 155 160
 Tyr Ala Lys Trp Phe Asp Ser Val Ile Leu Val Met Ala Asn Glu Asp
 165 170 175
 Ile Arg Arg Glu Arg Phe Met Lys Lys Thr Gly Arg Ser Ser Glu Asp
 180 185 190
 Phe Asp Gln Arg Cys Ser Arg Phe Leu Asn Val Glu Glu Lys Leu Ala
 195 200 205
 Gln Ala Asp Val Val Val Glu Asn Asn Gly Thr Lys Lys Glu Leu His
 210 215 220
 Gln Lys Ile Glu Glu Tyr Phe Tyr Ala Leu Lys Gly Ala Leu
 225 230 235

<210>651

<211>870

<212>PRT

<213>Chlamydia pneumoniae

<400>651

Met Lys Lys Leu Phe Val Leu Asp Ala Ser Gly Phe Ile Phe Arg Ala
 1 5 10 15
 Tyr Phe Ala Leu Pro Glu Met Lys Asn His Gln Gly Gln Ala Thr Gln
 20 25 30
 Ala Val Phe Gly Phe Ile Arg Ser Leu Asn Lys Leu Ile Lys Glu Phe
 35 40 45
 Ser Pro Glu Tyr Met Ile Ser Val Phe Asp Gly Pro Asn Asn Lys Gln
 50 55 60
 Ser Arg Gln Ala Ile Tyr Ala Asp Tyr Lys Ser Asn Arg Gln Lys Lys
 65 70 75 80
 Phe Glu Asp Ile Pro Pro Gln Ile Ala Leu Val Lys Glu Tyr Cys Ser
 85 90 95
 Leu Ile Gly Leu Ala Tyr Leu Glu Lys Glu Ser Val Glu Ala Asp Asp
 100 105 110
 Val Ile Ala Ser Ile Ala Lys Lys Ala Arg Glu Glu Asn Tyr Lys Val
 115 120 125
 Tyr Val Cys Thr Ala Asp Lys Asp Leu Leu Gln Leu Val Asn Asp His
 130 135 140
 Val Val Ala Trp Asn Pro Trp Ala Asp Gln Gly Val Val Gly Ile Ser
 145 150 155 160
 Glu Val Ile Glu Arg Tyr Gly Ile Pro Pro Gly Asn Ile Pro Asp Tyr
 165 170 175
 Leu Ala Leu Val Gly Asp Ser Ser Asp Asn Ile Pro Gly Leu Pro Gly
 180 185 190
 Cys Gly Pro Lys Lys Ala Ala Ala Leu Leu Lys Gln Phe Gly Ser Val
 195 200 205
 Glu Gly Leu Leu Glu Asn Leu Asp Ala Val Lys Gly Leu Ser Gln Thr
 210 215 220
 Met Leu Ser Glu Arg Gln Glu Thr Leu Lys Leu Ser Lys Arg Leu Ala
 225 230 235 240
 Leu Leu Asp Ser Asn Ile Pro Ile Pro Val Pro Ile Glu Ser Leu Thr
 245 250 255
 Phe Pro Gln His Pro Val Asp Glu Glu Lys Leu Ile His Phe Tyr Ile

PCT/LB98/01890

788

770 775 780
 Phe Ala Val Asn Thr Arg Ile Gln Gly Ser Ala Ala Glu Leu Ile Lys
 785 790 795 800
 Leu Ala Met Leu Asp Ile Ser Gln Ala Ile Lys Gln Gln Gln Met Lys
 805 810 815
 Ser Arg Met Leu Leu Gln Ile His Asp Glu Leu Leu Phe Glu Val Pro
 820 825 830
 Glu Glu Glu Ile Glu Glu Met Gln Arg Leu Val Arg Glu Lys Met Glu
 835 840 845
 Ser Ala Met Thr Leu Ser Val Pro Ile Val Val Asn Ile Leu Ile Gly
 850 855 860
 Lys Asn Trp Ala Glu Cys
 865 870
 <210>652
 <211>333
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>652
 Met Lys Thr Leu Trp His Phe Val Ser Lys Ala Phe Leu Ser Ile Val
 1 5 10 15
 Gly Leu Cys Cys Gly Val Val Leu Ala Phe Val Val Ile Phe Ala Leu
 20 25 30
 Ile Ala Ser Ser Leu Gly Asn Gly Asp Ala Thr Phe Val Ser Leu Pro
 35 40 45
 Asp Ala Gln Gly Glu Val Lys Asp Leu Gly Lys Thr Ala Pro Ile Ile
 50 55 60
 Ala Val Ile Glu Met Lys Asp Val Ile Ala Ser Lys Asn Thr Ala
 65 70 75 80
 Lys Thr Ile Gln Asn Ile Leu Glu Gly Phe Glu Lys Ala Pro Leu Lys
 85 90 95
 Asp Arg Val Lys Gly Ile Val Ile Asp Met Asp Cys Pro Gly Gly Glu
 100 105 110
 Val Phe Glu Ile Asp Arg Ile Tyr Ser Met Leu Arg Phe Trp Lys Glu
 115 120 125
 Arg Lys Gly Phe Pro Ile Tyr Ile Tyr Val Asn Gly Leu Cys Ala Ser
 130 135 140
 Gly Gly Tyr Tyr Val Ser Cys Ala Ala Thr Lys Ile Tyr Ala Thr Ser
 145 150 155 160
 Ser Ser Leu Ile Gly Ser Ile Gly Val Arg Ser Gly Pro Phe Phe Asn
 165 170 175
 Val Lys Glu Gly Leu Asn Arg Tyr Gly Val Glu Ser Asp Leu Leu Thr
 180 185 190
 Ala Gly Lys Asp Lys Ala Pro Met Asn Pro Tyr Thr Pro Trp Thr Ser
 195 200 205
 His Asp Arg Glu Glu Arg Gln Ala Thr Leu Asp Phe Leu Tyr Gly Gln
 210 215 220
 Phe Val Asp Ile Val Thr Gln Asn Arg Pro Leu Leu Thr Lys Glu Lys
 225 230 235 240
 Leu Val His Thr Leu Gly Ala Arg Ile Phe Ser Pro Glu Lys Ala Lys
 245 250 255
 Gln Glu Gly Tyr Ile Asp Val Val Gly Ala Thr Lys Glu Gln Val Leu
 260 265 270
 Gln Asp Ile Val Ala Val Cys Lys Ile Glu Asp Asn Tyr Arg Val Ile
 275 280 285
 Gly Ser Gly Gly Asp Gly Trp Trp Lys Arg Val Ala Ser Ala Ala Ala
 290 295 300
 Ser Ser Pro Leu Val Thr Gly Met Ile Lys His Asp Ile Leu Pro Leu
 305 310 315 320
 Ser His Asp Ala Ala Tyr Ile Pro Pro Tyr Leu Ala Leu
 325 330
 <210>653
 <211>551
 <212>PRT
 <213>Chlamydia pneumoniae

<400>653

Val Phe Ile Arg His Lys Val Gly Lys Glu Phe Met Gln Ser Ser Glu
 1 5 10 15
 Val Lys Pro Phe Ser Arg Leu Arg Ala Tyr Leu Cys Pro Ile Tyr Lys
 20 25 30
 Ser Glu Phe Ser Lys Phe Val Pro Leu Phe Leu Leu Ala Phe Phe Val
 35 40 45
 Gly Phe Asn Tyr Cys Leu Leu Lys Asn Met Lys Asp Thr Leu Val Ile
 50 55 60
 Val Gly Ser Asp Ala Gly Ala Glu Val Ile Pro Phe Leu Lys Val Trp
 65 70 75 80
 Gly Ile Val Pro Gly Ala Val Ile Val Thr Met Val Tyr Gly Trp Leu
 85 90 95
 Gly Ser Arg Tyr Pro Arg Asp Thr Val Phe Tyr Cys Phe Met Ala Ala
 100 105 110
 Phe Leu Gly Phe Phe Phe Leu Phe Ala Val Ile Ile Tyr Pro Val Gly
 115 120 125
 Asp Ser Leu His Leu Asn Ser Leu Ala Asp Lys Leu Gln Glu Leu Leu
 130 135 140
 Pro Gln Gly Leu Arg Gly Phe Ile Val Met Val Arg Tyr Trp Ser Tyr
 145 150 155 160
 Ser Ile Tyr Tyr Val Met Ser Glu Leu Trp Ser Ser Val Val Leu Ser
 165 170 175
 Met Leu Phe Trp Gly Leu Ala Asn Gln Ile Thr Thr Ile Thr Glu Ala
 180 185 190
 Gly Arg Phe Tyr Ala Leu Ile Asn Thr Gly Leu Asn Leu Ser Ser Ile
 195 200 205
 Cys Ala Gly Glu Ile Ser Tyr Trp Met Gly Lys Gln Thr Phe Val Ala
 210 215 220
 Tyr Ser Phe Ala Cys Asp Ser Trp His Ser Val Met Leu Asn Leu Thr
 225 230 235 240
 Met Leu Ile Thr Cys Ser Gly Leu Ile Met Ile Trp Leu Tyr Arg Arg
 245 250 255
 Ile His His Leu Thr Ile Asp Thr Ser Ile Pro Pro Ser Arg Arg Val
 260 265 270
 Leu Ala Glu Glu Gly Ala Ala Thr Ala Asn Leu Lys Glu Lys Lys Lys
 275 280 285
 Pro Lys Ala Lys Ala Arg Asn Leu Phe Leu His Leu Ile Gln Ser Arg
 290 295 300
 Tyr Leu Leu Gly Leu Ala Ile Ile Val Leu Ser Tyr Asn Leu Val Ile
 305 310 315 320
 His Leu Phe Glu Val Val Trp Lys Asp Gln Val Ser Gln Ile Tyr Ser
 325 330 335
 Ser His Val Glu Phe Asn Gly Tyr Met Ser Arg Ile Thr Thr Leu Ile
 340 345 350
 Gly Val Val Ser Val Leu Ala Ala Val Leu Leu Thr Gly Gln Cys Ile
 355 360 365
 Arg Lys Trp Gly Trp Thr Val Gly Ala Leu Val Thr Pro Leu Val Met
 370 375 380
 Leu Val Ser Gly Leu Leu Phe Phe Gly Thr Ile Phe Ala Ala Lys Arg
 385 390 395 400
 Asp Ile Ser Ile Phe Gly Gly Val Leu Gly Met Thr Pro Leu Ala Leu
 405 410 415
 Ala Ala Trp Thr Gly Gly Met Gln Asn Val Leu Ser Arg Gly Thr Lys
 420 425 430
 Phe Thr Phe Phe Asp Gln Thr Lys Glu Met Ala Phe Ile Pro Leu Ser
 435 440 445
 Pro Glu Asp Lys Asn His Gly Lys Ala Ala Ile Asp Gly Val Val Ser
 450 455 460
 Arg Ile Gly Lys Ser Gly Gly Ser Leu Ile Tyr Gln Gly Leu Leu Val
 465 470 475 480
 Ile Phe Ser Ser Val Ala Ala Ser Leu Asn Val Ile Ala Leu Val Leu
 485 490 495
 Leu Ile Ile Met Val Val Trp Ile Ala Val Val Ala Tyr Ile Gly Lys